Operating Instructions

AUDIO/VIDEO STEREO RECEIVER

VSX-502
VSX-512S

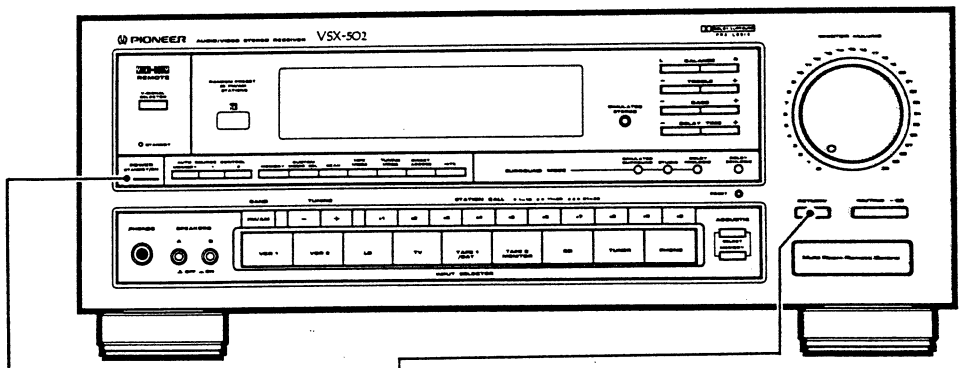

*Illustration shows model VSX-502.

DEMO MODE

- The demonstration mode is activated by turning on the power switch while holding down the RETURN button (from power standby condition). The demonstration will appear on the display.
- Press the POWER switch to cancel the demonstration.
- Activating the demonstration mode causes memory contents to return to their original default condition except tuner.

Thank you for buying this Pioneer product.
Please read through these operating instructions so you will know how to operate your model properly. After you have finished reading the instructions, put them away in a safe place for future reference.
In some countries or regions, the shape of the power plug and power outlet may sometimes differ from that shown in the explanatory drawings. However, the method of connecting and operating the unit is the same.

WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE.

IMPORTANT NOTICE
[For U.S. and Canadian models]

The serial number for this equipment is located on the rear panel. Please write this serial number on your enclosed warranty card and keep it in a secure area. This is for your security.

Note to CATV system installer

This reminder is provided to call the CATV system installer's attention to Article 820-40 of the NEC that provides guidelines for proper grounding and, in particular, specifies that the cable ground shall be connected to the grounding system of the building, as close to the point of cable entry as practical.

[For Canadian model]

CAUTION: TO PREVENT ELECTRIC SHOCK DO NOT USE THIS (POLARIZED) PLUG WITH AN EXTENSION CORD, RECEPTACLE OR OTHER OUTLET UNLESS THE BLADES CAN BE FULLY INSERTED TO PREVENT BLADE EXPOSURE.

ATTENTION: POUR PREVENIR LES CHOCS ELECTRIQUES NE PAS UTILISER CETTE FICHE POLARISEE AVEC UN PROLONGATEUR UNE PRISE DE COURANT OU UNE AUTRE SORTIE DE COURANT, SAUF SI LES LAMES PEUVENT ETRE INSEREES A FOND SANS EN LAISSER AUCUNE PARTIE A DECOUVERT.

RETURN function

This function returns the unit to a set of initial settings and ready to broadcast tuner. This is helpful during troubleshooting or when no sound is output. For details, refer to page 17.

PIONEER®
The Art of Entertainment

IMPORTANT

The lightning flash with arrowhead, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

CAUTION:
TO PREVENT THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

SAFETY INSTRUCTIONS

READ INSTRUCTIONS – All the safety and operating instructions should be read before the appliance is operated.

RETAIN INSTRUCTIONS – The safety and operating instrucions should be retained for future reference.

HEED WARNING – All warnings on the appliance and in the operating instructions should be adhered to.

FOLLOW INSTRUCTIONS – All operating and use instructions should be followed.

WATER AND MOISTURE – The appliance should not be used near water – for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, etc.

LOCATION – The appliance should be installed in a stable location.

WALL OR CEILING MOUNTING – The appliance should not be mounted to a wall or ceiling.

VENTILATION – The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

HEAT – The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.

POWER SOURCES – The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.

POWER-CORD PROTECTION – Power-supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them. Pay particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.

POLARIZATION – If your purchased product is provided with a polarized power plug, please read the following instructions. This product is equipped with a polarized alternating current line plug (a plug having one blade wider than the other). This plug will fit into the power outlet only one way. This is a safety feature. If you are unable to insert the plug fully into the outlet, try reversing the plug. If the plug should still fail to fit, contact your electrician to replace your obsolete outlet. Do not defeat the safety purpose of the polarized plug.

CLEANING – The appliance should be cleaned only with a polishing cloth or a soft dry cloth. Never clean with furniture wax, benzine, insecticides or other volatile liquids since they may corrode the cabinet.

POWER LINES – An outdoor antenna should be located away from power lines.

NONUSE PERIODS – The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.

OBJECT AND LIQUID ENTRY – Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.

DAMAGE REQUIRING SERVICE – The appliance should be serviced by a Pioneer authorized service center or qualified service personnel when:

- The power-supply cord or the plug has been damaged.
- Objects have fallen, or liquid has been spilled into the appliance.
- The appliance has been exposed to rain.
- The appliance does not appear to operate normally or exhibits a marked change in performance.
- The appliance has been dropped or the enclosure damaged.

SERVICING – The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

OUTDOOR ANTENNA GROUNDING – If an outside antenna is connected to the antenna terminal, be sure the antenna system is grounded so as to provide some protection against voltage surges and built-up static charges.
In the U.S.A. section 810 of the National Electrical Code, ANSI/NFPA 70, provides information with respect to proper grounding of the mast and supporting structure, grounding of the lead-in wire to an antenna discharge unit, size of grounding conductors, location of antenna discharge unit, connection to grounding electrodes, and requirements for the grounding electrode. See Fig. A.

CART – An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

NEC – NATIONAL ELECTRIC CODE

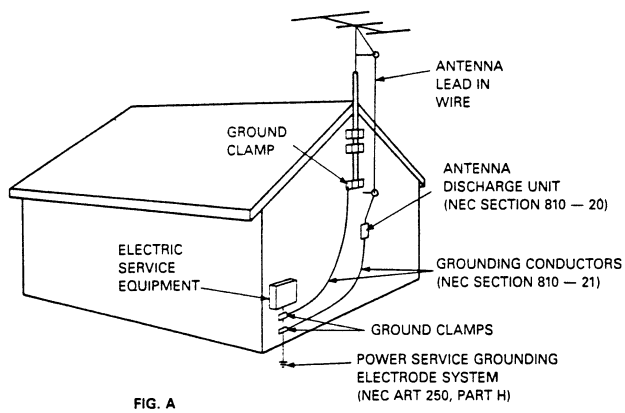

FIG. A

Information to User

Alteration or modifications carried out without appropriate authorization may invalidate the user's right to operate the equipment.

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BEFORE OPERATING, ADJUST THE POSITION OF THESE SWITCHES

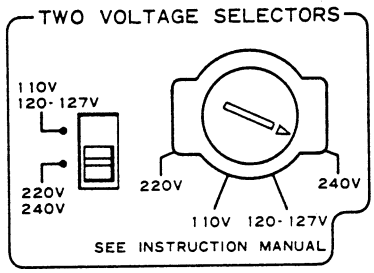
TWO VOLTAGE SELECTOR SWITCHES

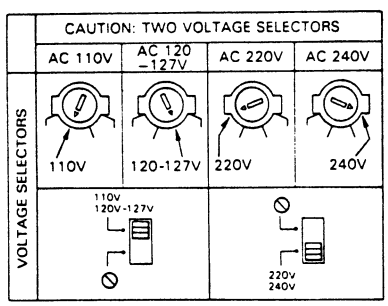
Only multi-voltage models are provided with these switches. U.S., Canadian, European, U.K. and Australian models are not provided with these switches.

Mains voltages in Saudi Arabia are 127 V and 220 V only. Never use this model with 110 V setting in Saudi Arabia.

The line voltage selector switches are on the rear panel. Before your model is shipped from the factory, these switches are set to the power requirements of the destination. Check that they are set properly before plugging the power cord into the household wall socket. If the voltage is not properly set or if you move to an area where the voltage requirements differ, adjust the selector switches as follows.

1. Use a medium-size screwdriver.
2. First, insert a screwdriver in the groove of the voltage selector at the right, and adjust so that the tip of the groove points to the voltage value of your area.
3. Next, insert a screwdriver in the groove of the voltage selector at the left and adjust until the voltage is the same as at the right.





NOTE:

Both switches must be in the same switch setting; otherwise, unit can be damaged.

CHANNEL STEP/FM DE-EMPHASIS SWITCH (Not available on U.S. and Canadian models)

The unit has been factory preset to the channel allocation and de-emphasis value for the area in which it is to be sold. If these values are set incorrectly, the frequency display may stop at the wrong frequency, or sound may be distorted, resulting in an inability to reproduce reception signals at their proper sound quality. For this reason, be sure to confirm that the values are set correctly before first using the unit.

[100 kHz/10 kHz/75 μs] position:

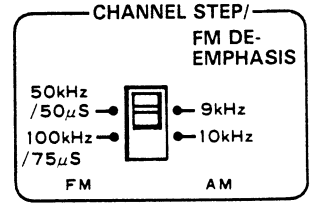
Set to this position for areas with an FM reception step of 100 kHz, AM 10 kHz, and de-emphasis 75 μs.

[50 kHz/9 kHz/50 μs] position:

Set to this position, for areas with an FM reception step of 50 kHz, AM 9 kHz, and de-emphasis 50 μs.

NOTE:

When unsure about the channel allocation and de-emphasis values for your area, consult your dealer for correct information.



FEATURES

The VSX-502/VSX-512S combines the functions of receiver, wireless remote control, audio-visual selector and surround processor. It will play a central role in your enjoyment of audio-video media.

• BUILT-IN DIGITAL DELAY, DOLBY SURROUND CIRCUIT

You can enjoy STUDIO and SIMULATED surround playback. And thanks to the built-in DOLBY PRO LOGIC SURROUND decoder, you can also enjoy the superb imaging and sensation of movement provided by DOLBY SURROUND when using software bearing the DOLBY SURROUND mark. (When not using rear speakers, DOLBY 3CH LOGIC lets you enjoy the ambience of a wide, spacious sound field.)
With SIMULATED and DOLBY PRO LOGIC SURROUND, changing the delay time lets you enjoy a wider sound field effect.

• LARGE, MOTOR-DRIVEN VOLUME KNOB

The large volume knob contributes to operational convenience and positive response. You can even operate it via remote control. When you change the volume setting using the remote control unit, the knob turns by itself, making it easy to keep track of the current setting.

• VIDEO SIGNAL SELECTOR (Simulcast function)

Allows free combination of various audio-visual sources during playback and over-dubbing, enabling you to produce your own original video product.

• TWO-WAY VCR COPYING AND MONITORING

VCR 1 — VCR 2: Copying of video cassette tapes can be performed in either direction.
LD — VCR 1, VCR 2: Allows simultaneous production of two copies from video disc or compact disc with video.

• ACOUSTIC MEMORY FUNCTION

Five types (A—E) of tone control settings can be preset. The settings for loudness and flat tone response functions can also be selected quickly.

• CUSTOM MEMORY FUNCTION

Stations can be preset according to the genre of the material broadcast, and Memory Scan of a particular genre can be carried out.

• 90/60/30-MINUTE SLEEP TIMER FUNCTION

• MULTI-ROOM REMOTE JACK

The optional MR-100 Multi-room remote control unit can be connected to the Multi-room remote IN jack.

[VSX-502]

• AV REMOTE CONTROL UNIT

With the attached remote control unit you can operate any Pioneer audio or video component bearing the SR mark.

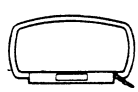
[VSX-512S]

• AV PROGRAMMABLE REMOTE CONTROL UNIT

With the attached programmable remote control unit, you can operate any Pioneer audio or video component bearing the SR mark. If you use the LEARN function, remote commands of components not bearing the SR mark can be memorized, giving you remote control over a component's functions.
You can also use the MULTI-COMMAND to memorize up to seven commands in order, letting you transmit them at the push of a single button.

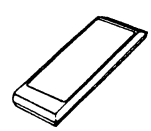
ACCESSORY ITEMS

FM T-type Antenna



AM Loop Antenna

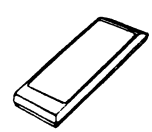
VSX-502



A/V remote control unit

Dry cell battery x 2
(size "AAA" (R03/UM-4))

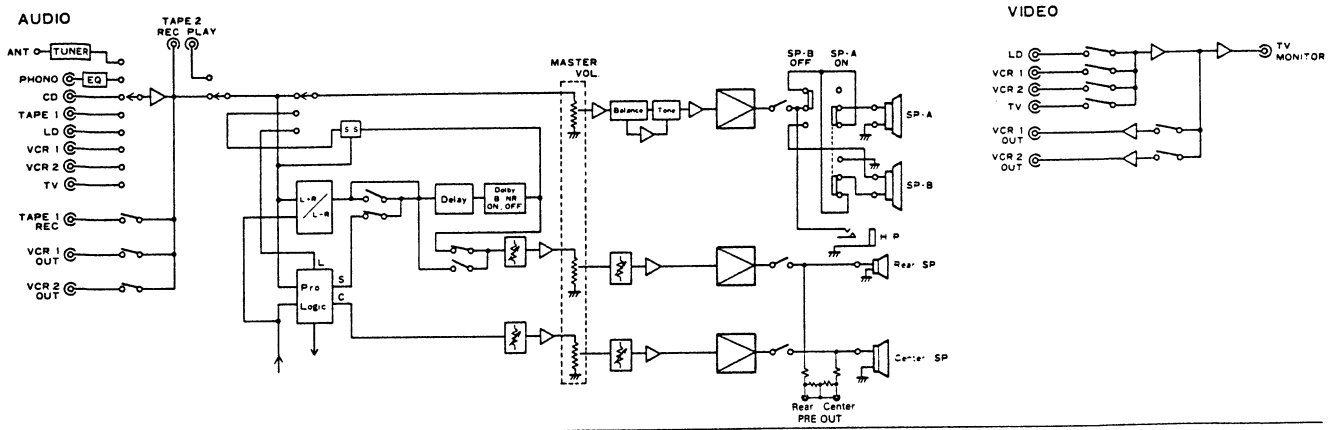
VSX-512S



Audio/Video programmable remote control unit

Alkaline dry cell battery x 1
(size "AA" (LR6/AM-3))

BLOCK DIAGRAM



SURROUND EFFECT

This unit has a built-in surround processor for adding presence and an expansive effect to the sound.

• STUDIO:

Select this position to enjoy the effect of listening to music in a recording studio.
The source sound is output as it is through the front speakers, with reverberation output through the rear speakers.
This is particularly suitable for a source that has a lot of reverberation.

• SIMULATED SURROUND:

The "SIMULATED" creates effects of reverberated and reflected sound from the walls and ceiling similar to a concert hall. These sound-effects added to the actual sound from the source make you feel as if you were in a more expanded space. The different ranges of the expanded space can be set by the DELAY TIME button.
Set the Delay Time to 16 ms or 20 ms for a live-house concert. For chamber music, set to 20 ms. For orchestral music, set to 30 ms. The "SIMULATED SURROUND" also gives effects on monaural sources by outputting the reverberated sound from rear speakers while keeping the output sound from front speakers as it is. Turn on the "SIMULATED SURROUND" for a monaural source to gain effective surround playback.

Choose the SIMULATED SURROUND mode if the source sound signal is mono. Little or no sound will be heard from the surround speakers if the STUDIO or DOLBY PRO LOGIC SURROUND mode is selected.

• DOLBY PRO LOGIC SURROUND

Choose this setting for movies and music (especially Video Discs and video tapes bearing the DOLBY SURROUND mark) playback.
DOLBY PRO LOGIC SURROUND continuously detects the size and directional of the dominant signal and cancels undesirable crosstalk, thereby providing signal emphasis.
Clearly perceive the directional sound of the music. Real flow of sound also can be re-created naturally using this feature. The feeling will be as if in the outstanding and expansive sound field.

When using DOLBY PRO LOGIC SURROUND, a delay time setting of 20 ms is commonly used. Use a different setting if you prefer.
Even if they do not bear the DOLBY SURROUND mark, some video recordings may be Dolby Surround encoded.

Note:
Dolby Surround will not operate correctly if the signal passes through a graphic equalizer.
When using Dolby Surround, turn off the TAPE 2 MONITOR or set the graphic equalizer for flat response or to its "through" (or off) setting, if you have one in use.

DOLBY 3CH LOGIC

Combining the rear speaker signal with that of the front speakers results in being able to enjoy a regenerated sound field which has comparatively more presence and a more expansive feeling from the front 3 channels (front L, front R, and center speakers) than that of ordinary stereo regeneration.
DOLBY 3CH LOGIC can be used with stereo sources not encoded with DOLBY SURROUND.

*
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*
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"'Dolby,' 'Pro Logic,' et le symbole double-D sont des marques de Dolby Laboratories Licensing Corporation."

DOLBY PRO LOGIC SURROUND, DOLBY 3CH LOGIC CENTER MODE

Choose from the following settings:
Center Mode Choices:

When using a center speaker:

- **NORMAL** — Low range frequencies, which have little effect on directionality and positioning, are routed to the left and right front speakers. A relatively small size speaker can be used as the center speaker.
- **WIDE** — If a large size center speaker is used, choose this setting. The full frequency range of the Dolby Surround center channel, from low to high, is routed to the center speaker.

When not using a center speaker: DOLBY PRO LOGIC SURROUND

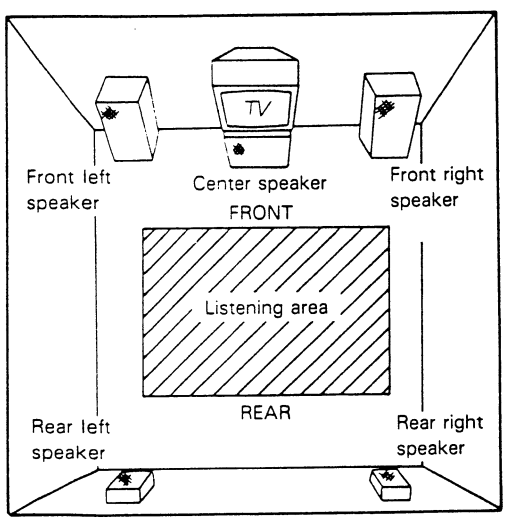
- **PHANTOM** — The signal which would have been sent to the center speaker is divided equally between the left and right front speakers.

With DOLBY PRO LOGIC SURROUND, monaural source sound will be heard only from the center channel at settings other than the PHANTOM position.

SPEAKER INSTALLATION

To get the most out of the surround system, place the speakers as shown below.

An example of speaker positioning



If the rear speakers are positioned at an extreme distance, the surround level becomes unable to adjust and the surround effect will not be fully achieved.

NOTE:

- *To avoid interference with the picture on a nearby TV set, use magnetically shielded speaker systems. This is particularly important for the center speaker since it is usually located closest to the TV.*
- *Position the left and right channel speakers at equal distances from the TV set and approximately 1.8 m (6 feet) from each other.*
- *Position the center speaker above, below, or behind the TV set. Sound may not appear to coincide with the picture if you position it next to the TV set.*
- *Rear speakers are best positioned slightly above ear level.*

SIMULATED STEREO

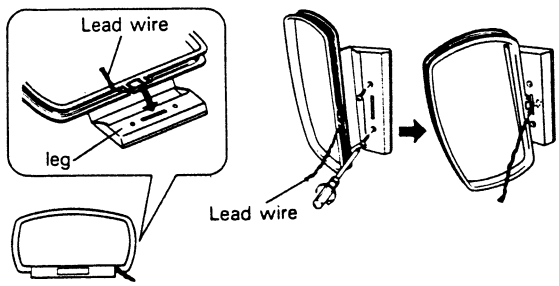
This function transforms monaural signals into simulated stereo sound. This will create a sense of stereo presence when listening to AM broadcasts, and other monaural signal sources.

NOTE:
The simulated stereo function can also be used with stereo sound sources, but it will result in an effect somewhat different from the normal stereo sound.

CONNECTIONS

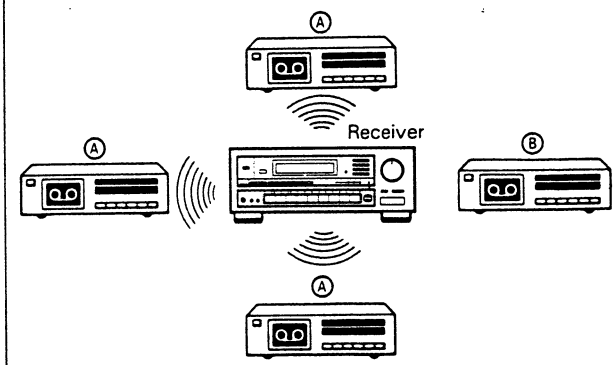
Setting Up the AM Antenna

- Insert the claw on the bottom of the antenna into the groove in the leg.
- Place the antenna on a level surface and rotate it to locate the orientation that yields the best reception.
- Use the attachment hole in the leg to screw to wall or other location, then insert the claw on the bottom of the antenna into the groove in the leg (fixing the antenna in the direction that gives the best reception).



Precaution regarding installation position of cassette deck.

If the cassette deck is installed in the Ⓐ positions shown in the drawing below, it may be adversely affected during playback. If possible, it's better to install it in the Ⓑ position.



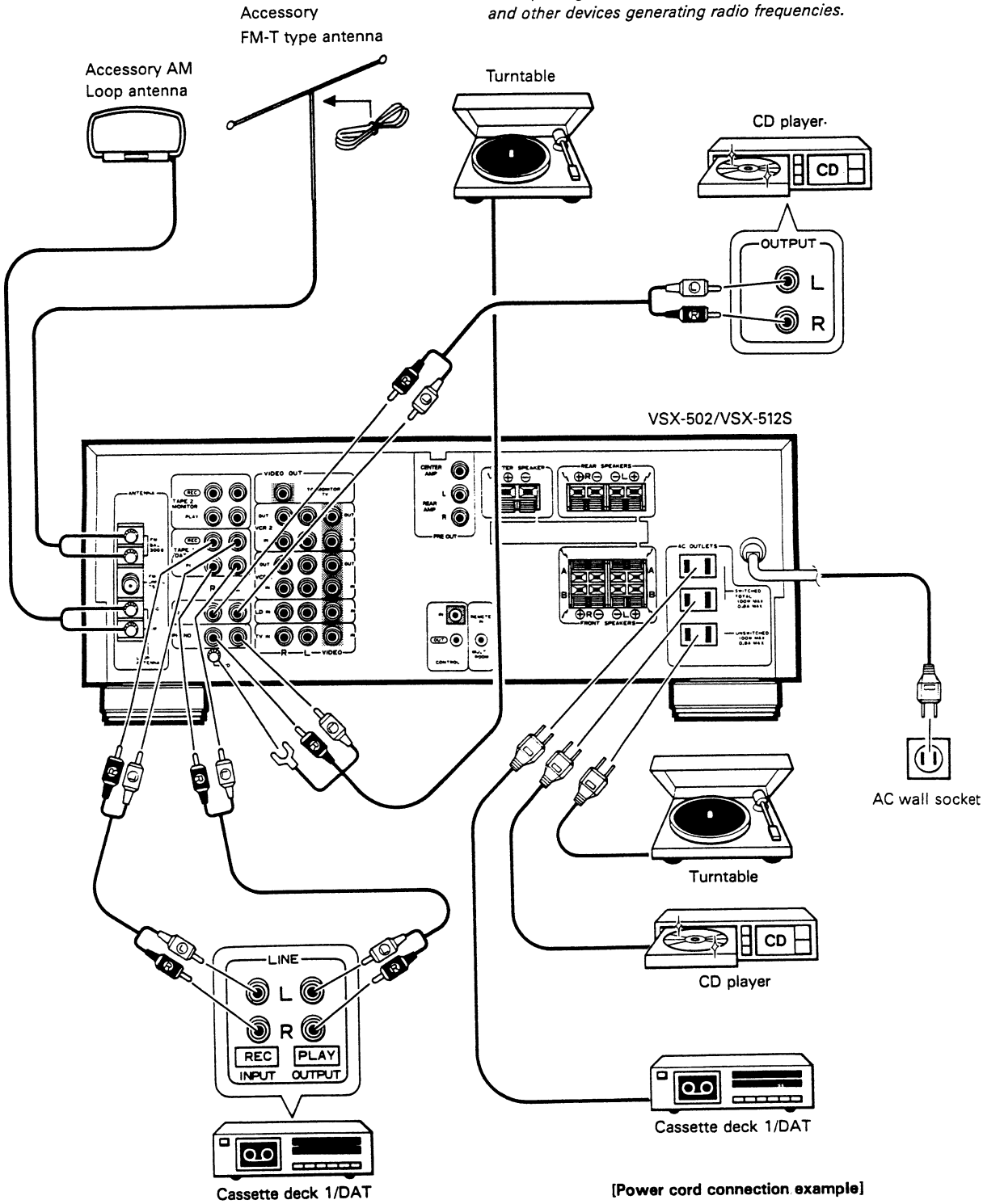
POWER-CORD CAUTION

Handle the power cord by the plug. Do not pull out the plug by tugging the cord and never touch the power cord when your hands are wet as this could cause a short circuit or electric shock. Do not place the unit, a piece of furniture, etc., on the power cord, or pinch the cord. Never make a knot in the cord or tie it with other cords. The power cords should be routed such that they are not likely to be stepped on. A damaged power cord can cause fire or give you an electrical shock. Check the power cord once in a while. When you find it damaged, ask your nearest PIONEER authorized service center or your dealer for a replacement.

BASIC AUDIO SYSTEM CONNECTIONS

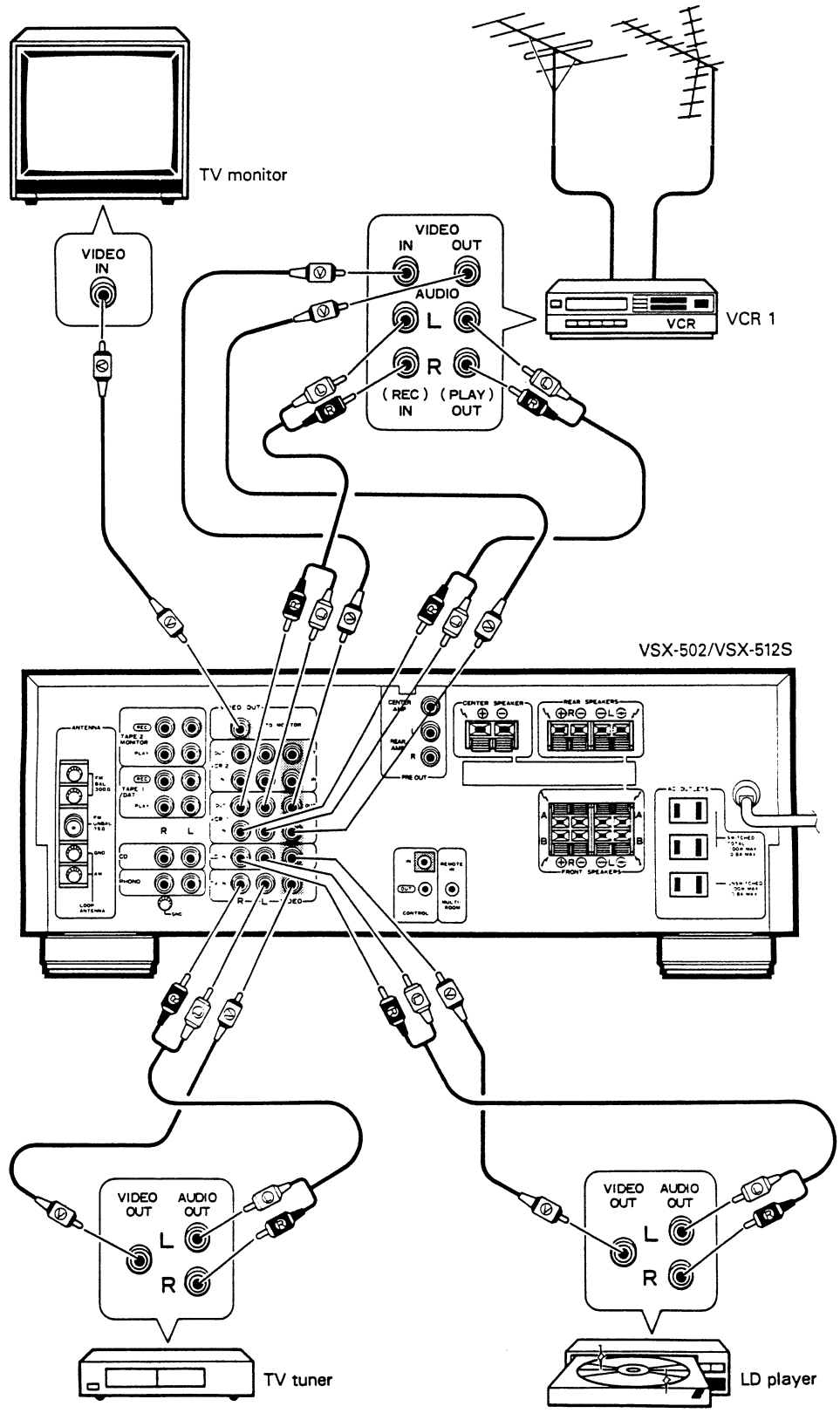
NOTE FOR FM T-TYPE ANTENNA
Stretch the antenna out to its full length, and affix it to a wall, etc.

NOTE FOR AM LOOP ANTENNA
The antenna should be placed at a distance from the receiver, and should not be allowed to touch metallic objects.
Avoid placing it near CD players, personal computers, television sets, and other devices generating radio frequencies.



[Power cord connection example]

BASIC VIDEO SYSTEM CONNECTIONS

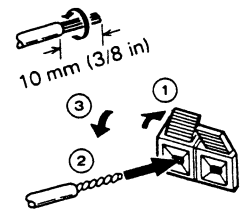


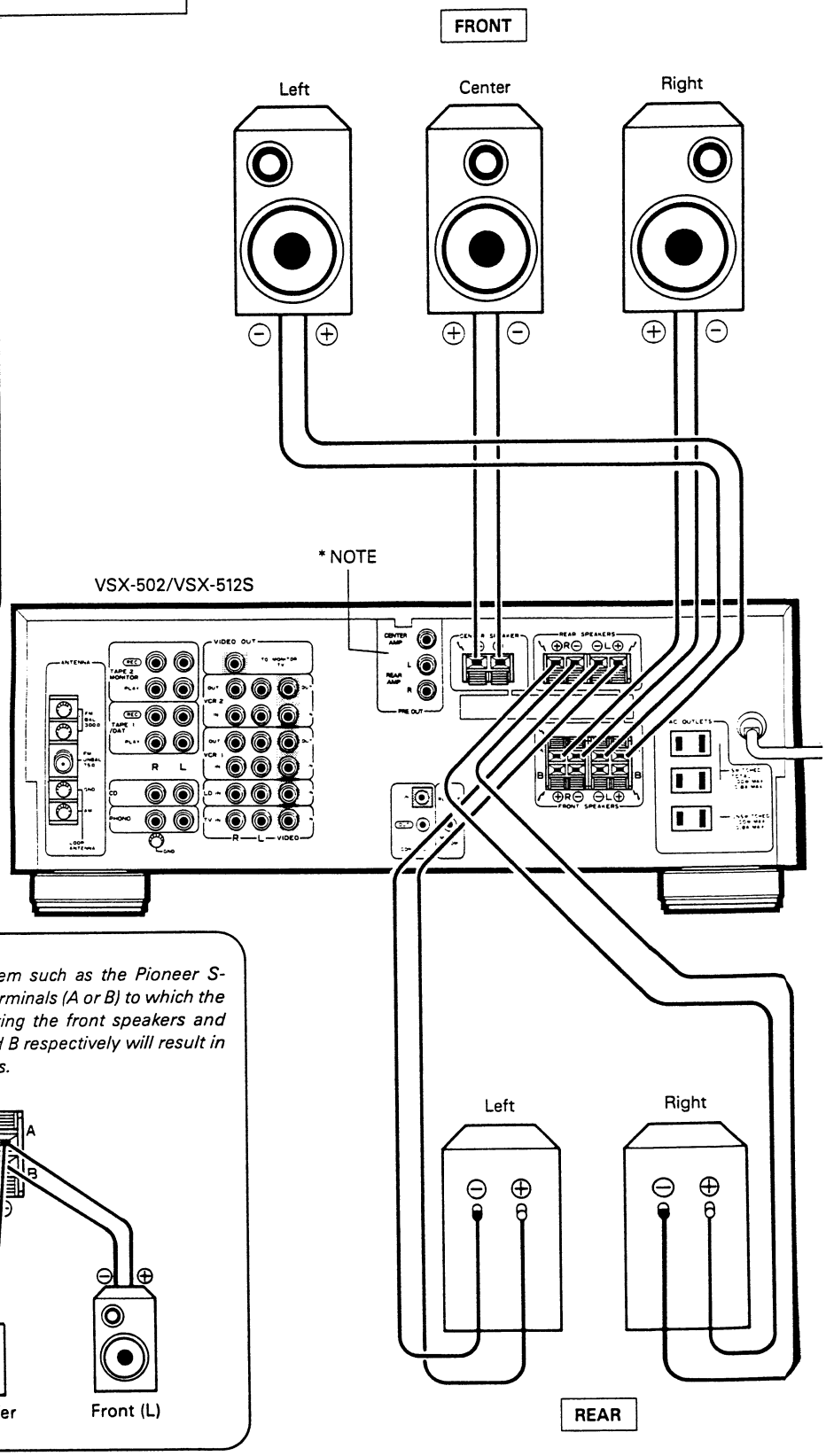
SPEAKER CONNECTIONS

NOTE:
Use speakers of impedance 8 Ω — 16 Ω.

Speaker cord connection

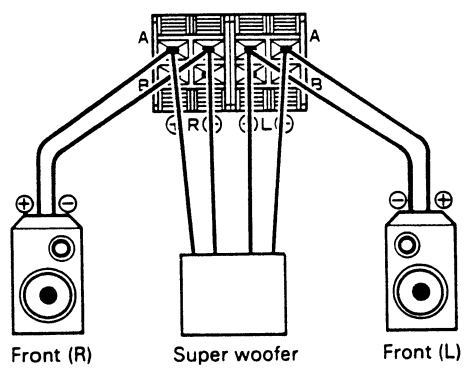
① Push the lever up (or down).
② Insert the cord.
③ Pull the lever back.





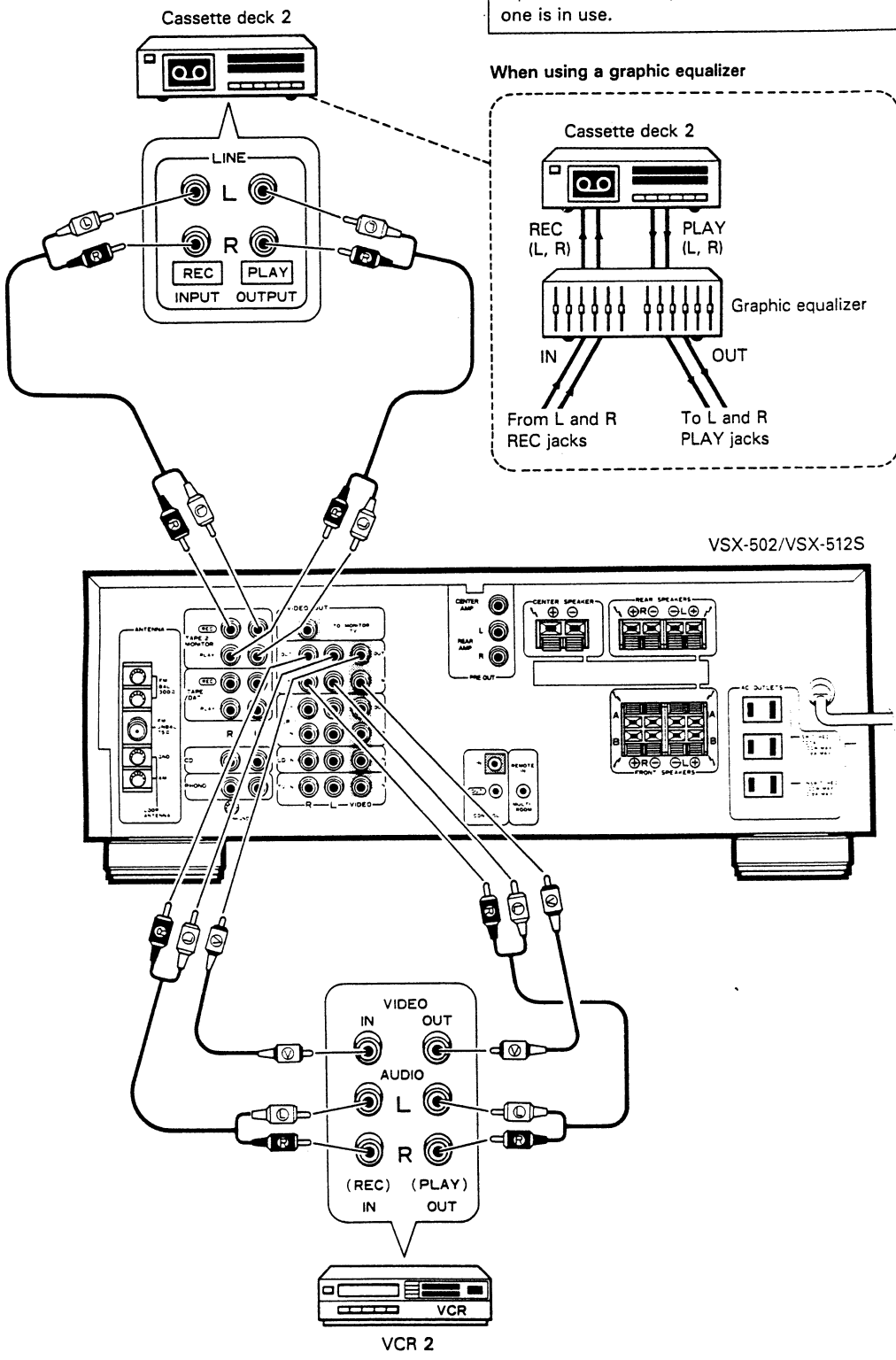
**NOTE:*
Use if you want to use additional power amplifiers to boost center and rear channels power output. Refer to page 13 for connection instructions.

NOTE:
When connecting a super woofer system such as the Pioneer S-W1000, connect it to the same speaker terminals (A or B) to which the front speakers are connected. Connecting the front speakers and super woofer system to terminals A and B respectively will result in reduced volume from the front speakers.



APPLICATIONS

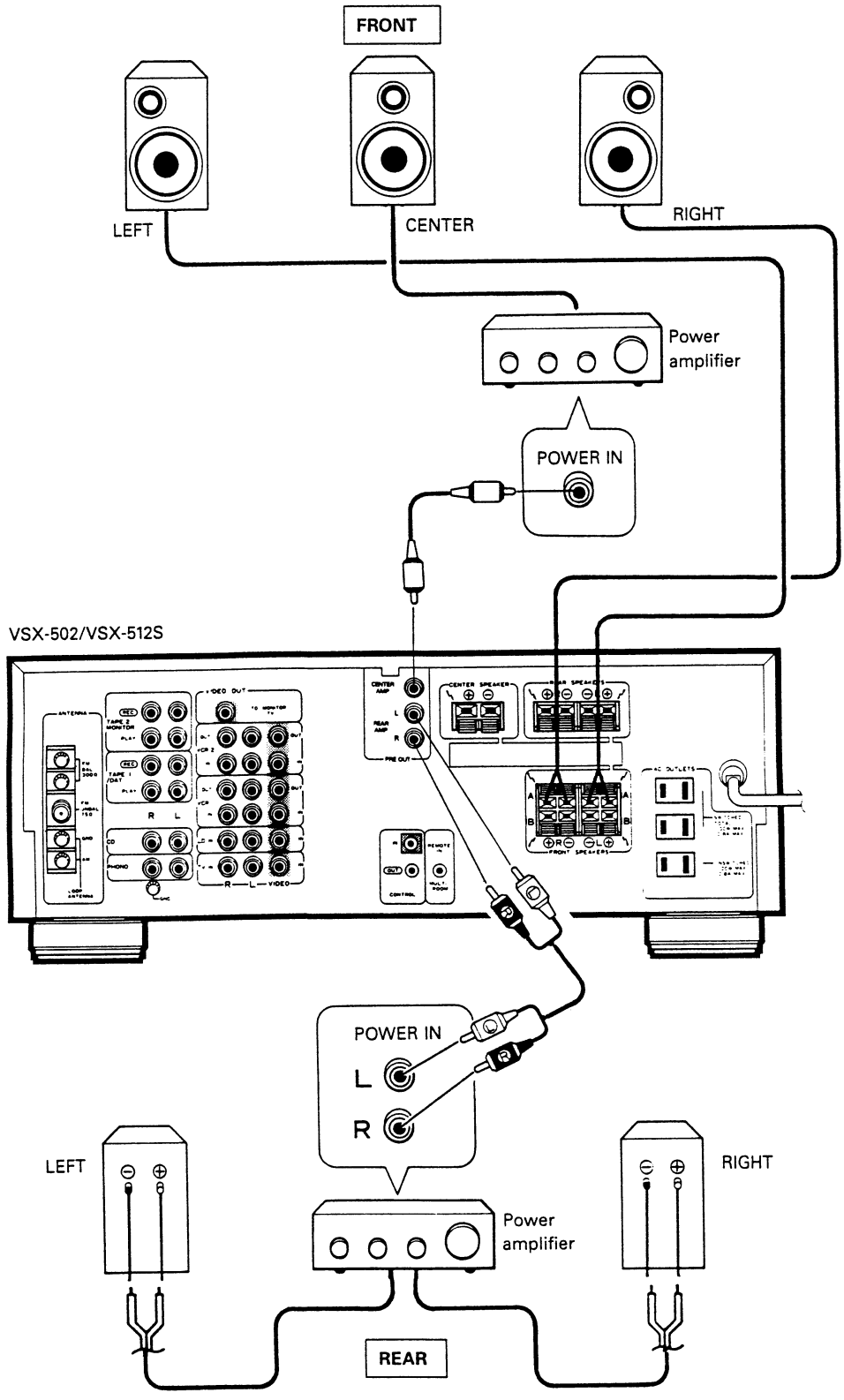
NOTE:
DOLBY PRO LOGIC SURROUND and DOLBY 3CH LOGIC will not operate correctly if the signal passes through a graphic equalizer. When using DOLBY PRO LOGIC SURROUND or DOLBY 3CH LOGIC, turn off the TAPE 2 MONITOR button or set the graphic equalizer for flat response or to its "through" (or off) setting, if one is in use.



When used with another power amplifier

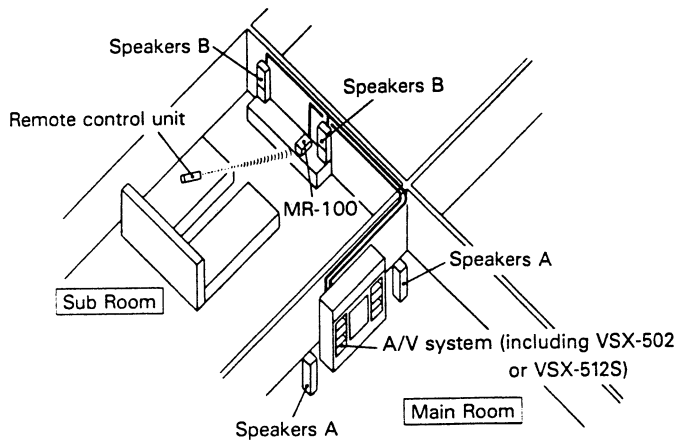
To increase the center channel and/or rear channel power, connect additional power amplifiers to this unit's PRE OUT (CENTER, REAR L, R) jacks and connect the speakers to the additional amplifiers speaker terminals.

Caution for use of AC OUTLETS:
Components which have electrical power consumption greater than that indicated on the rear panel of this unit cannot be connected. Please take necessary precaution.



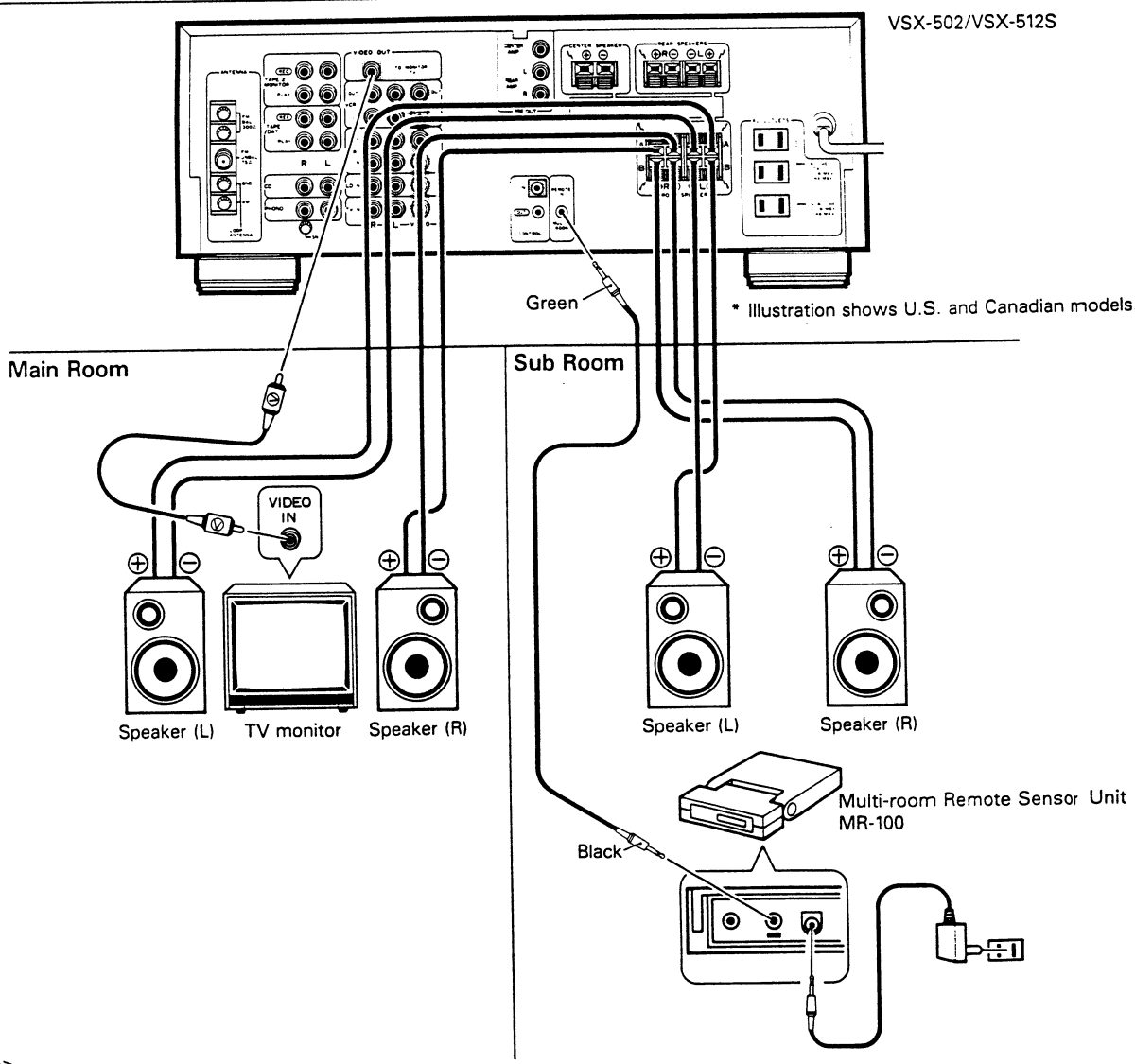
MULTI-ROOM CONNECTIONS

[Set-up example]



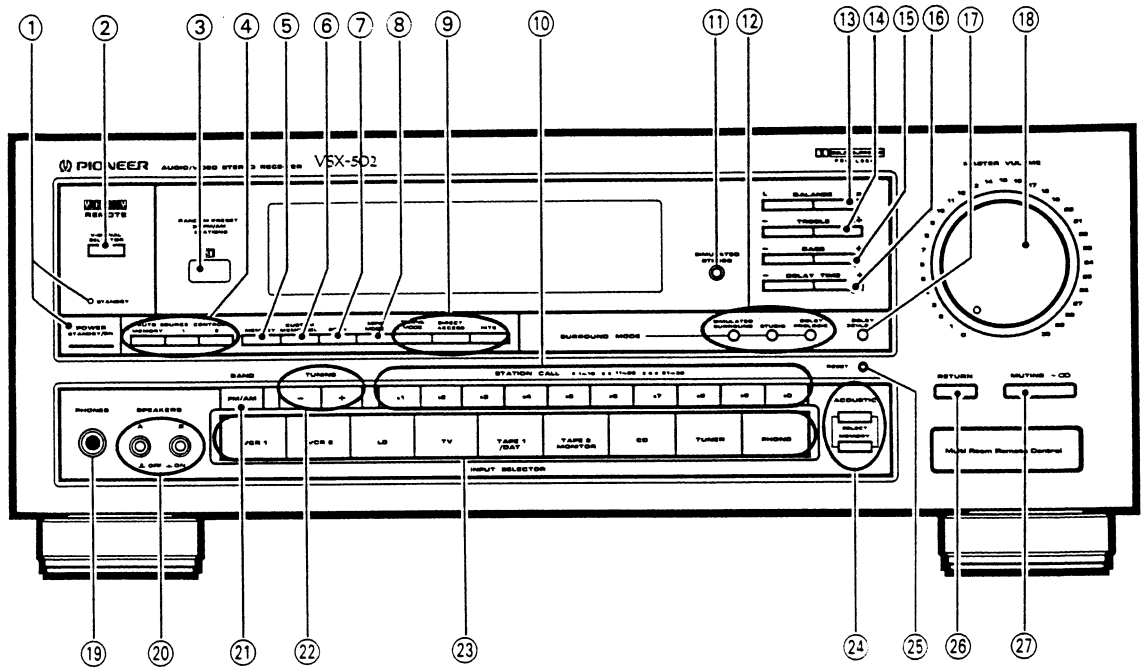
NOTE:
Be careful not to make the wrong connections for CONTROL IN/OUT (black) and MULTI-ROOM REMOTE IN (green).

- If connected to the CONTROL jacks of other components, such as a CD player or cassette deck, bearing the SR mark, remote control of these components are possible from Sub Room. (For details concerning connections, refer to page 20.)



FRONT PANEL FACILITIES

*Illustration shows model VSX-502.



① POWER STANDBY/ON switch/STANDBY indicator

This is the switch for electric power.

ON : When set to the ON position, power is supplied and the unit becomes operational.

STANDBY : When set to STANDBY position, the main power flow is cut and the unit is no longer fully operational. A minute flow of power feeds the unit to maintain operation readiness.
The STANDBY indicator lights when the power is STANDBY, and goes out during ON.

[Timer ON/OFF possible]
When the unit is switched ON, ON/OFF control can be performed by means of the optional timer.

NOTE:
When the power is initially turned ON, muting will be applied to prevent sound output for about 5 seconds.

② V-SIGNAL (VIDEO SIGNAL) SELECTOR button

Use to change the video signal in sequence leaving the sound unchanged.

→ VCR 1 → VCR 2 → LD → TV → OFF →

The current setting is shown by an indicator on the display section.

③ Remote sensor

④ AUTO SOURCE CONTROL buttons (See page 28)

1, 2 buttons:
These buttons are for memorizing and recalling current settings. Both 1 and 2 can be used to memorize settings. If another component is connected, such as a CD player, to the CONTROL OUT jack on the rear panel, the signals to switch power on and start play are also transmitted.

MEMORY:
Use when memorizing settings to a 1, 2 button.

⑤ MEMORY button (See page 22)

Pressing this button will result in the memorization of the current broadcast band, reception frequency, and FM AUTO/MONO mode. This button is also used for custom memory operation.

⑥ CUSTOM MEMO SEL button (See page 22)

Recall a genre name with this button.

→ ROCK → POP → JAZZ → NEWS → OTHER →

⑦ SCAN button

Operate when the INPUT SELECTOR is set to TUNER. Station frequencies assigned to the STATION CALL buttons are tuned in, one after another, beginning with the current station no., for approximately 5 seconds each. The display section SCAN indicator will light. Press the button again and the tuner remains tuned in to the station playing when the button was pressed the second time. Station frequencies not assigned station numbers in the memory are skipped.
When a CUSTOM MEMORY genre is selected, memory scan is performed on the stations in that genre.

⑧ MPX MODE button

Use to select the auto stereo mode or monaural mode when listening to FM broadcasts. The monaural mode has been selected when the FM MONO indicator in the display section is lit.

Auto stereo mode:
Normally, leave in this mode for reception. When a stereo FM broadcast is received, it will be automatically reproduced in stereo.

Monaural mode:
When receiving distant stations or stations with weak broadcast signals, the input signal may be weak, thus resulting in increased noise during FM stereo broadcasts. In this event, setting the receiver to the monaural mode will reduce the noise. In this case, however, FM stereo broadcasts will be reproduced in monaural sound.

NOTE:
This button has no effect on reception of AM broadcasts.

⑨ Tuning buttons
TUNING MODE selector button: (Page 21, 22)

Use to select the tuning mode. To select the AUTO tuning mode, press this button to light the AUTO TUNING indicator in the display section. To select the MANUAL tuning mode, switch off the AUTO TUNING indicator.

AUTO tuning
When the − or + TUNING button is pressed, the receiver automatically scans the broadcast station frequencies. When a broadcast is detected, the scanning stops at that frequency.

NOTE:
Pressing the TUNING button (− or +) while scanning is taking place causes scanning to stop.

MANUAL tuning
Use to manually tune to particular broadcast frequencies. Each press of the + or − button raises or lowers the frequency by one tuning step. For continuous scanning, keep the button pressed, then release it to stop scanning.

DIRECT ACCESS tuning button: (Page 21)

When this button is pressed, the STATION CALL buttons function as ten-key number buttons for direct input of the desired reception frequency. Press again to cancel this mode.
If the input station falls outside of the receiver's tuning range, the display section will display a message: "UPPER" if the frequency is too high and "LOWER" if it is too low.

HITS (Hyper Intelligent Tuning System) button: (Page 23)

Press this button, and search automatically begins up and down the frequency for stations that can be received. When a station that can be received is found, the search operation stops.

⑩ STATION CALL buttons

Up to 30 FM or AM stations can be preset at random.
These buttons are used to preset and recall desired broadcasting stations, FM MPX MODE (AUTO/MONO) mode.

NOTE:
- *Pressing STATION CALL button will select TUNER as the source, regardless of what other listening source or function was selected.*
- *They are also used when performing direct access tuning.*

⑪ SIMULATED STEREO button

Press to produce a simulated stereo effect when listening to monaural sources (for example, normal AM or TV broadcasts). "SIMULATED STEREO" appears on the display section.

NOTE:
- *This effect is not produced through the rear speakers.*
- *Use with the SURROUND MODE in the OFF.*

⑫ SURROUND MODE selector buttons

SIMULATED SURROUND:
Select this setting when listening to music or a monaural source, etc.
STUDIO:
Select this setting to enjoy the effect of listening to music in a recording studio.
DOLBY PRO LOGIC SURROUND:
Select this setting when watching video tapes or video discs bearing the DOLBY SURROUND mark.

⑬ BALANCE buttons

Use them to adjust the sound volume balance between left and right speakers.
L: Press to decrease the sound on the right side.
R: Press to decrease the sound on the left side.
Press L and R together to bring the volume balance back to center.

NOTE:
The left-right sound volume balance cannot be adjusted on the rear speakers.

⑭ TREBLE control buttons

Use to adjust the high-frequency level. Press the + button to increase the high-frequency level, and the − button to decrease it.
The TONE indicator appears on the display section.
When both buttons (+, −) of the TREBLE control are pressed simultaneously, the treble response will be set to the flat (normal) condition.

⑮ BASS control buttons

Use to adjust the low-frequency level. Press the + button to increase the low-frequency level, and the − button to decrease it.
The TONE indicator appears on the display section.
When both buttons (+, −) of the BASS control are pressed simultaneously, the bass response will be set to the flat (normal) condition.

⑯ DELAY TIME buttons

Operates when the SIMULATED SURROUND or DOLBY PRO LOGIC SURROUND mode is ON.
Switches to surround delay time in 8 steps. For DOLBY PRO LOGIC SURROUND, 20 ms is standard.
Changes in 2 ms steps.

16 ms ↔ 18 ms ↔ ··· ↔ 28 ms ↔ 30 ms

⑰ DOLBY 3CH LOGIC button

Select this setting when stereo-source regeneration and rear speakers are not connected to use the front L, front R, and center speakers to enjoy audio/visual material bearing the DOLBY SURROUND mark.

⑱ MASTER VOLUME control

Use it to simultaneously adjust the sound volume from the front, center and rear speakers.

⑲ PHONES jack

Connect a headphone set plug to this jack. Set all SPEAKERS A and B switches to OFF to cut the sound from speakers and to listen only through the headphones.

⑳ SPEAKERS buttons (A, B) ▮OFF ▬ON

ON/OFF switches for the A and B speaker systems.

NOTE:
No sound will be heard through the speakers when both A and B buttons are depressed if only one set of speakers has been connected to either A or B SPEAKERS terminals.

㉑ BAND (FM/AM) button

Use this to switch between FM and AM frequency band reception.

㉒ TUNING buttons

+: Performs tuning from the currently displayed station frequency in ascending frequency order.
−: Performs tuning in order of descending frequencies.

㉓ INPUT SELECTOR buttons

VCR 1: Press when performing playback on a first VCR unit.
VCR 2: Press when performing playback on a second VCR unit.
LD : Press when performing playback on a LD player.
TV : Press when using a TV tuner connected to the TV jacks.
TAPE 1/DAT:
Press when performing playback on a cassette deck or DAT.
TAPE 2 MONITOR:
Press when performing playback on a second cassette deck or second DAT and when monitoring recording.
CD : Press when playing compact discs on a CD player.
TUNER : Press when listening to radio broadcasts.
PHONO : Press when playing records on turntable.

㉔ ACOUSTIC buttons (See page 26)

MEMORY:
Pressing this button will result in the memorization of the sound quality (tone control condition). Press again to cancel this mode.
SELECT:
- This button is used to preset the five acoustic memories (A—E).
- This button is also used to recall previously set sound quality settings. Each time the button is pressed, the sound quality setting advances in the order shown below.

→ FLAT → LOUDNESS → A → B → C → D → E →

FLAT : For flat (normal) frequency response.
LOUDNESS: Emphasizes the low- and high- frequency ranges. Produces a fuller sense of sound, particularly when listening at low volume.
A—E : Memorized acoustic memory settings.

㉕ RESET button

Use this when normal operation becomes impossible because of external influences such as static electricity or lightning, or when operation is impossible even when operation buttons are pressed. Press this button to return to normal operating conditions.
If this button is pressed when the power is ON, the unit switches to POWER STANDBY, and the entire contents of the memory are erased.

㉖ RETURN button

Press this button to return the receiver into the initial state. TUNER is selected at this initial state. Adjust the sound level by using the MASTER VOLUME control.

- TAPE 2 MONITOR ..... OFF
- SURROUND MODE ..... OFF
- MUTING ..... OFF
- BALANCE ..... CENTER
- FUNCTION ..... TUNER
- V-SIGNAL SELECTOR ... OFF
- TONE ..... flat

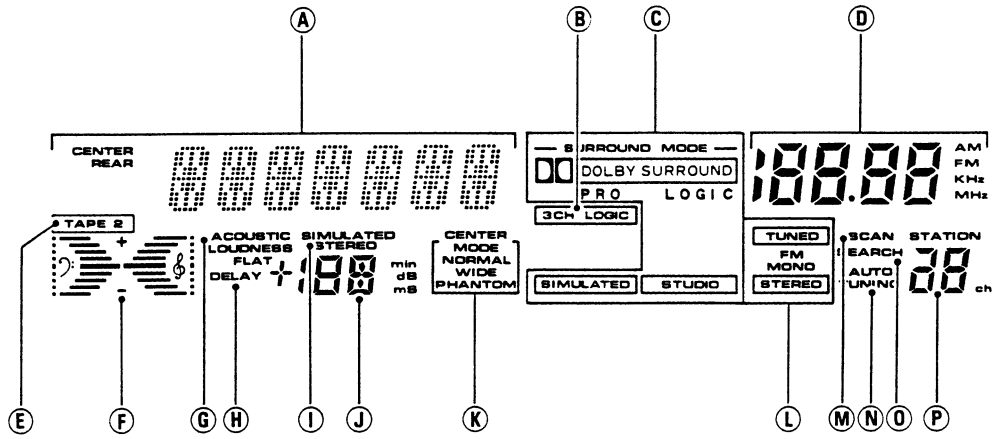
The HITS function searches for broadcast stations among the frequencies displayed.

NOTE:
If no sound is output after the RETURN button is pressed, make sure that SPEAKERS buttons are turned on.

㉗ MUTING button

Press to temporarily cut off the sound volume. The display section MUTING indicator will flash. When pressed again, the sound will return to its previous level.

DISPLAY SECTION



Ⓐ CHARACTER/LEVEL/BALANCE display

- This displays the name of the component selected with the INPUT SELECTOR and V-SIGNAL SELECTOR, etc.
- It also displays the level and balance settings during adjustment.

Ⓑ DOLBY 3CH LOGIC indicator

Ⓒ SURROUND MODE indicators

Ⓓ Frequency/Band display

Ⓔ TAPE 2 indicator

Lights up when the INPUT SELECTOR is set to TAPE 2 MONITOR ON.

Ⓕ TONE level indicator

Shows the settings of the BASS and TREBLE buttons.

Ⓖ ACOUSTIC display

Ⓗ DELAY indicator

Ⓘ SIMULATED STEREO indicator

Ⓙ ACOUSTIC/DELAY TIME/LEVEL/SLEEP TIME display

- Indicates delay time (ms) when using DOLBY PRO LOGIC SURROUND.
- Indicates rear level and center level (dB).
- Indicates sleep timer settings (min).
- Displays Acoustic memory letters A to E.

Ⓚ CENTER MODE indicators

These display the center mode (NORMAL, WIDE, PHANTOM) during DOLBY PRO LOGIC SURROUND and DOLBY 3CH LOGIC operation (Refer to page 6, 7).

Ⓛ Tuning indicators

TUNED : Lights up when a station is tuned.
FM MONO : Lights up when the FM MONO mode is selected with the MPX MODE button.
STEREO : Lights up when a stereo FM broadcast is being received.

Ⓜ SCAN indicator

Lights up during memory scan operation.

Ⓝ AUTO TUNING indicator

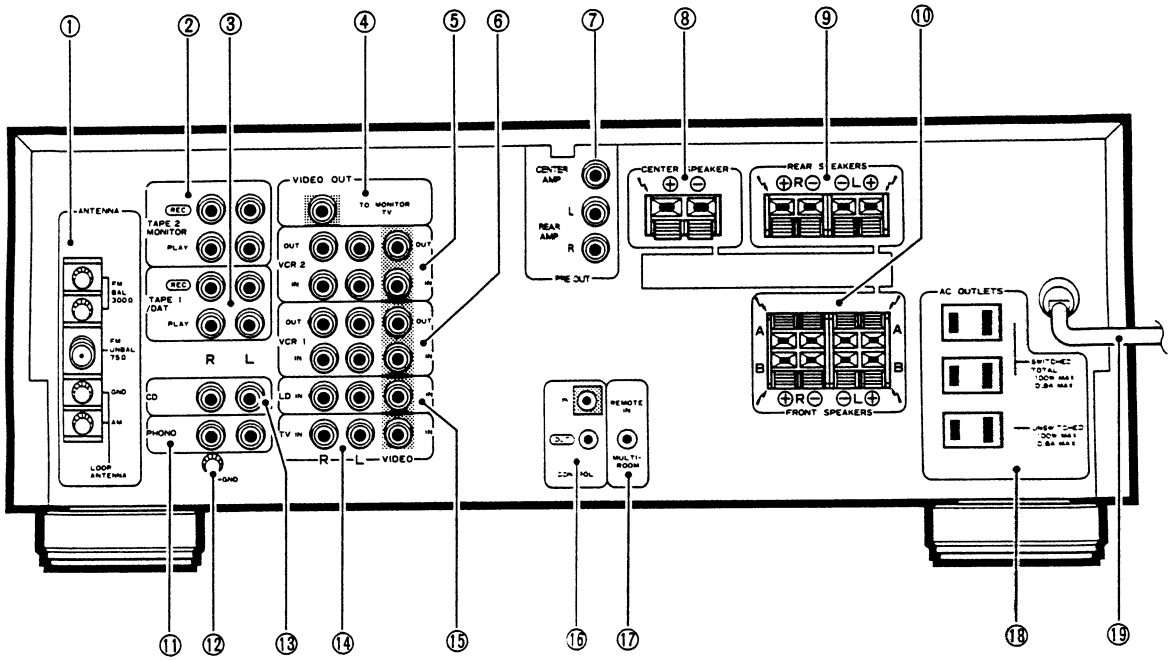
Lights up when in the auto tuning mode.

Ⓞ SEARCH indicator

Ⓟ STATION display

Indicates the channel (ch) selected with the STATION CALL buttons.

REAR PANEL FACILITIES



① FM/AM ANTENNA terminals

Use these antenna terminals for reception of normal FM and AM broadcasts.

② TAPE 2 MONITOR jacks

Connect the second cassette deck to these jacks.

Connecting for Recording

The tape recording jack (REC) on the cassette deck should be connected to the REC side of the TAPE 2 MONITOR jack on the receiver with a pin plug connecting cord.

Connecting for Playback

Connect the TAPE PLAY jack on the cassette deck to the PLAY side of the TAPE 2 MONITOR jack on the receiver with a pin plug connecting cord.

③ TAPE 1/DAT jacks

Use these to connect the first cassette deck or DAT (digital audio tape) deck.

Connecting for Recording

The tape recording jack (REC) on the cassette deck or DAT should be connected to the REC side of the TAPE 1/DAT jack on the receiver with a pin plug connecting cord.

Connecting for Playback

Connect the PLAY jack on the cassette deck or DAT to the PLAY side of the TAPE 1/DAT jack on the receiver with a pin plug connecting cord.

④ VIDEO OUT (TV MONITOR) jack

Connect to monitor TV or to TV sets with video input terminals for watching program materials from a VCR 1, 2 or LD player connected to this unit.

⑤ VCR 2 jacks

[VIDEO OUT]

When copying program material from the video component connected to the VCR 1, TV or LD jacks, connect to the VIDEO INPUT jacks of the VCR used for recording.

[AUDIO OUT (L, R)]

When copying program materials from the video component connected to the VCR 1, TV or LD jacks, or when recording music from an audio component source, connect to the AUDIO INPUT jacks of the VCR used for recording.

[VIDEO IN]

When monitoring the video image from a VCR used for copying, connect its VIDEO OUTPUT jacks here.

[AUDIO IN (L, R)]

When monitoring the audio channel from a VCR used for copying, connect its AUDIO OUTPUT jacks here.

⑥ VCR 1 jacks

[VIDEO OUT]

When copying program material from the video component connected to the VCR 2, TV or LD jacks, connect to the VIDEO INPUT jacks of the VCR used for recording.

[AUDIO OUT (L, R)]

When copying program material from the video component connected to the VCR 2, TV or LD jacks, or when recording music from an audio component source, connect to the AUDIO INPUT jacks of the VCR used for recording.

[VIDEO IN]

When monitoring the video image from a VCR used for playing, connect its VIDEO OUTPUT jacks here.

[AUDIO IN (L, R)]

When monitoring the audio channel from a VCR used for playing, connect its AUDIO OUTPUT jacks here.

⑦ PRE OUT jacks

[CENTER AMP]
When a separate power amplifier is used to drive the center speaker, connect the power amplifier to this jack.
[REAR AMP]
When a separate power amplifier is used to drive the rear speakers, connect the power amplifier to these jacks.

⑧ CENTER SPEAKER terminals

Connect the center speaker to these terminals.

NOTE:
Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctioning or breakdowns may occur when conductors come into contact with each other.
Use center speakers of impedance 8 Ω—16 Ω.

⑨ REAR SPEAKERS terminals

Connect the rear speakers to these terminals.

NOTE:
Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctioning or breakdowns may occur when conductors come into contact with each other.
Use rear speakers of impedance 8 Ω — 16 Ω.

⑩ FRONT SPEAKERS terminals

A: Connect to the first set of speakers.
B: Connect to the second set of speakers.
Speaker lead wire preparation and connection.

NOTE:
Do not allow any of the cord's conductors to protrude from the terminals or touch any other conductors. Malfunctioning or breakdowns may occur when conductors come into contact with each other.
Use speakers of impedance 8 Ω—16 Ω.

⑪ PHONO input jacks

Connect to the output cables from a turntable.

⑫ GND terminal

Connect the turntable ground lead to this terminal.

⑬ CD input jacks

Connect to the output jacks of a compact disc player.

⑭ TV jacks (input)

Use these jacks if you wish to connect a TV tuner with both video and audio outputs.
[VIDEO IN]
Connect the TV tuner's VIDEO OUTPUT to this jack.
[AUDIO IN (L, R)]
Connect the TV tuner's AUDIO OUTPUT to these jacks.

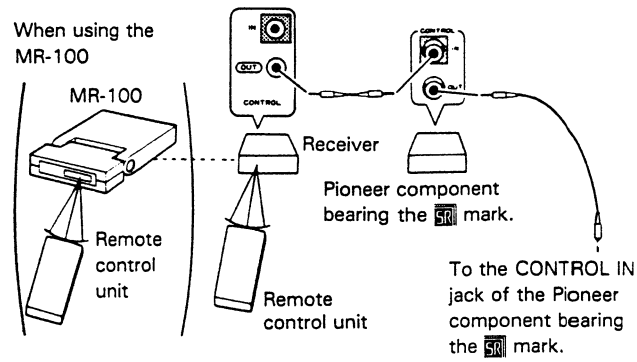
⑮ LD jacks

[VIDEO IN]
When watching the video image from a LD player, connect its VIDEO OUTPUT jacks here.
[AUDIO IN (L,R)]
When playing back the audio channel from a LD player, connect its AUDIO OUTPUT jacks here.

⑯ CONTROL IN/OUT jacks

IN : Connect this jack to other Pioneer components (main unit or remote control unit) when using those components to control this unit.
OUT : Connect this jack to other Pioneer components when using the remote control of this unit to control the other components.

NOTE:
The receiver's remote sensor does not function when a plug is inserted in IN jack. To operate, point the remote control unit at the remote sensor on the component to which the receiver's IN jack is connected.


When using the MR-100
MR-100
Receiver
Pioneer component bearing the SR mark.
Remote control unit
Remote control unit
To the CONTROL IN jack of the Pioneer component bearing the SR mark.

⑰ MULTI-ROOM REMOTE IN jack

Connect to the separately sold MR-100 Multi-Room remote control unit.

⑱ AC OUTLETS

[U.S. and Canadian models]

[SWITCHED TOTAL 100 W (0.8 A) MAX]
Power supplied through these outlets is turned on and off by the receiver's POWER switch. Total electrical power consumption of connected equipment should not exceed 100 W (0.8 A).
[UNSWITCHED 100 W (0.8 A) MAX]
Power flows continually to this outlet, regardless of whether the receiver is switched ON or OFF. Electrical power consumption of the connected equipment should not exceed 100 W (0.8 A).
The equipment should be disconnected by removing the power plug from the wall socket when not in regular use, e.g. when on vacation.

[Multi-voltage model]

SWITCHED TOTAL 100 W MAX
Power supplied through these outlets is turned on and off by the receiver's POWER switch. Total electrical power consumption of connected equipment should not exceed 100 W.
UNSWITCHED 100 W MAX
Power flows continually to this outlet, regardless of whether the receiver is switched ON or OFF. Electrical power consumption of the connected equipment should not exceed 100 W.

NOTE:
- *This unit should be disconnected by removing the power plug from the wall socket when not in regular use, e.g. when on vacation.*
- *Do not connect appliances with high power consmption such as heaters, irons, or television sets to these AC OUTLETS in order to avoid overheating and fire risk.*
  This can cause the receiver to malfunction.

CAUTION:
DO NOT CONNECT MONITOR OR TV SET.

⑲ Power cord

TUNER

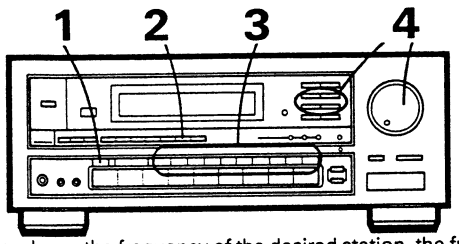
Press the POWER switch to the ON position.
Select TUNER with the INPUT SELECTOR.
Be sure to turn the TAPE 2 MONITOR button OFF when listening to AM or FM broadcasts.
Switch ON the SPEAKERS button corresponding to the speakers being used.

FM auto stereo reception and monaural reception

Each time you press the MPX MODE button, the FM MONO indicator in the display section lights or goes out.

- If an FM stereo broadcast is received when the FM MONO indicator is out, the STEREO indicator lights, and sound is in stereo.
- If an FM stereo broadcast is received when the FM MONO indicator is lit, the sound will be monaural.
  If there is interference during STEREO mode reception, switch to FM MONO. The sound will become monaural but interference will be reduced.

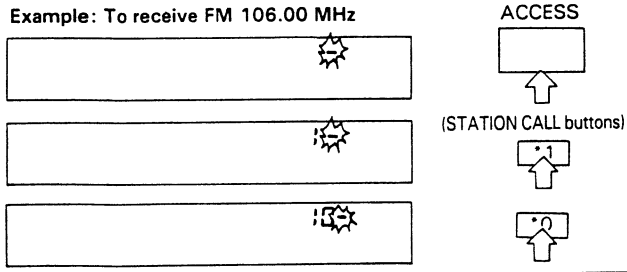
DIRECT ACCESS TUNING

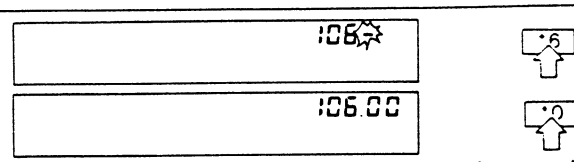


When you know the frequency of the desired station, the frequency can be input directly using the STATION CALL (number) buttons in the following way:

1. **Select either FM or AM using the BAND FM/AM button.**
2. **Press the DIRECT ACCESS button**
3. **Input the desired station frequency using the STATION CALL buttons.**

Example: To receive FM 106.00 MHz





Once the station frequency has been input, the receiver tunes in that frequency. If the input frequency falls below the lower or higher limit of the receiver's receivable frequency range "LOWER" or "UPPER" is displayed, indicating that the frequency which has been input cannot be tuned in.

4. **Adjust the sound volume and tone as desired.**

To cancel frequency input

Direct access is canceled when the DIRECT ACCESS button is pressed again.
Under the following conditions direct access is canceled and the unit returns to the condition in effect before direct access was selected:

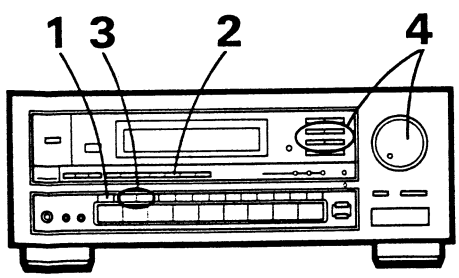
① If there is no key input for about five seconds after the DIRECT ACCESS button was pressed.
② If more than about eight seconds elapse between number input.

Notes regarding direct access tuning

- There is no need to input the last digit "0" of the desired station frequency.
  On the multi-voltage model, it is necessary to input the last digit of the desired station frequency when the channel step switch is set at the 50 kHz/9 kHz position.

AUTO TUNING

Auto tuning is convenient to locate the frequency of a desired station, or to find stations that are not normally listened to.



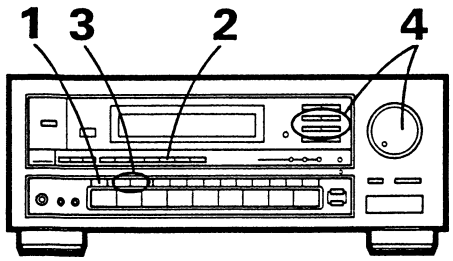
1. **Use the BAND FM/AM button to choose either FM or AM.**
2. **Press the TUNING MODE button and the AUTO TUNING indicator lights.**
3. **Press the "+" or "−" of the TUNING buttons.**
   - Pressing "+" causes scanning to take place in the direction of increasing frequency. Pressing "−" causes scanning to take place in the direction of decreasing frequency.
   - When a station is received, scanning will stop (the TUNED indicator lights). To receive a different station, press the TUNING button "+" or "−" again.
   - Pressing either TUNING (−, +) button during auto tuning causes tuning to stop at the current frequency.
4. **Adjust the sound volume and tone as desired.**

NOTE:

- *When Auto Tuning is used, correct reception may not be possible for very distant stations or stations with very weak signals. In this event, Manual Tuning is recommended.*
- *The TUNED indicator may not light with broadcasts received over long distances, or when the broadcast signals are extremely weak.*

MANUAL TUNING

Each time the TUNING button "+" or "−" is pressed, the tuning frequency changes by one step, to find stations manually.



1. **Use the BAND FM/AM button to choose either FM or AM.**
2. **Select Manual Tuning with the TUNING MODE button (the AUTO TUNING indicator goes out).**
3. **Press the "+" or "−" of the TUNING button as necessary to set to the frequency of the desired station.**
   - Each time the button is pressed, the tuning frequency will change by one step in the direction corresponding to the button pressed.
     If the button is kept depressed, the frequency changes continuously in sequence.
   - When a station is received, the [TUNED] indicator will light up.

NOTE:
The [TUNED] indicator may not light with broadcasts received over long distances, or when the broadcast signals are extremely weak.

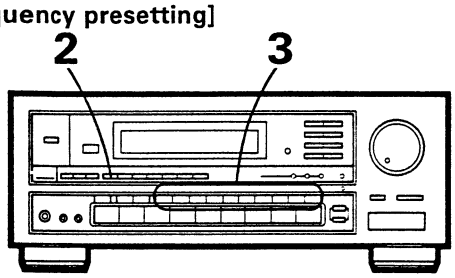
4. **Adjust the volume and tone as desired.**

PRESET TUNING

FREQUENCY PRESETTING AND CUSTOM MEMORY SELECTION

At the same time, you can also memorize stations under the following five different genre names according to the material played on the station (Custom memory).
The five following genres are available.
ROCK, POP, JAZZ, NEWS, OTHER

[Frequency presetting]

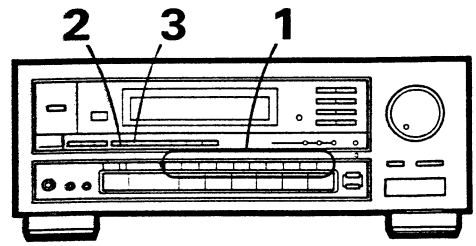


1. **Tune in the desired station.**
   - See the section "DIRECT ACCESS TUNING" for information on reception using the Direct Access Tuning mode.
   - See the section "AUTO TUNING" for information on reception using the Auto Tuning mode.
   - See the section "MANUAL TUNING" for information on reception using the Manual Tuning mode.
     In addition to station frequencies, the MPX MODE (AUTO/MONO) can also be preset.
2. **Press the MEMORY button.**
3. **Press the STATION CALL button into which you wish to preset the station.**
   - Use the STATION CALL buttons (*1 — *9, *0) to select a preset channel. One press selects the 1 — 10 range, two presses 11 — 20, and three presses 21 — 30.

[Example] If you press button [*3] :
Once — 3 ch
Twice — 13 ch
Three times — 23 ch
Press a STATION CALL button within two seconds.

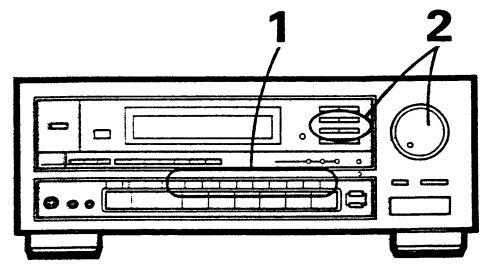
4. **Repeat steps 1 to 3 to preset additional stations.**
   Total of 30 AM and FM stations may be preset. When you store a new preset, it takes the place of the previously stored station (if any).

[Custom memory selection]



1. **Select the station number you want to memorize with the STATION CALL buttons.**
2. **Press the MEMORY button.**
3. **Display the desired genre with the CUSTOM MEMO SEL button.**
4. **When entering another station number into custom memory, repeat steps 1 to 3.**

LISTENING TO BROADCASTS USING PRESET TUNING



1. **Press the STATION CALL button into which the desired station has been preset.**
   - When the INPUT SELECTOR is set to a function other than TUNER, it will switch to the TUNER function automatically if one of the STATION CALL buttons is pressed.
     Tuning can be performed simply and accurately following the above procedure.
2. **Adjust the volume and tone as desired.**

NOTE:
The contents of the STATION CALL button will be retained for several days, even if the receiver power cord is unplugged.
If a preset station has been erased, preset it again.

Last station memory

When the POWER switch is pressed to turn the power on, the last station received before the power was previously turned off will be tuned in again.
When the power is ON, if the BAND FM/AM button is pressed, the last station received before the BAND FM/AM button was previously pressed will be tuned in again.

MEMORY SCAN

Reception of consecutive broadcast stations memorized in STATION CALL buttons (each station is received for about five seconds). Scan all stations, or just the stations memorized in the custom memory.

[Scanning the genres in the custom memory]

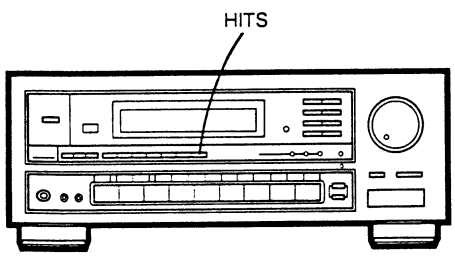
1. **Display the desired genre using the CUSTOM MEMO SEL button.**
2. **Press the SCAN button.**

[Scanning all the stations memorized in STATION CALL buttons]

During TUNER display, press the SCAN button.

HITS (Hyper Intelligent Tuning System)

Use the HITS function in the two following situations.



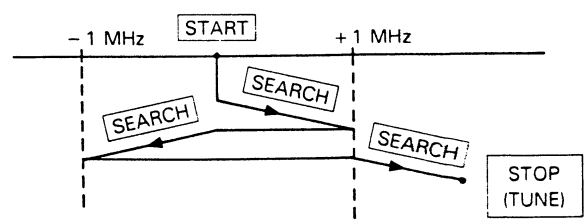
① When inputting frequency numbers for Direct Access Tuning:

If the HITS button is pressed during input of numbers for Direct Access tuning, the receiver sets the remaining digits which have not yet been input to "0", searches for the corresponding frequencies, and stops on the first station it finds.

② During frequency display:

If the HITS button is pressed at the currently displayed station frequency, the receiver searches up and down the frequency band for the next station (the SEARCH indicator in the display section lights at this time) and stops at the first one it finds.

(FM)



NOTE:

- *The system searches for stations within successive 1 MHz ranges for FM and 100 kHz ranges for AM. During Direct Access tuning, it searches up and down for a station until it reaches the edges of the band. If no receivable station is found within the band range, the receiver returns to the state it was in before the HITS button was pressed.*
- *If the upper (or lower) frequency limit of the receiver is encountered during HITS operation, the receiver stops searching in that direction but continues to search in the other.*

RECEIVING FM SIMULCAST TV PROGRAMS

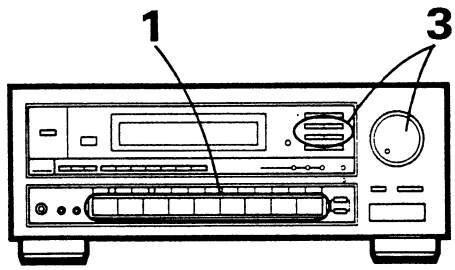
Combine a TV set and a VCR (or TV tuner), to receive FM simulcast TV programs (stereo TV sound transmitted from an FM radio station) while viewing the video portion on TV.

1. **Select the desired TV program with the TV set.**
2. **Tune in the desired FM simulcast TV program on the receiver.**
3. **Adjust the volume and tone controls as desired.**

OPERATING THE AUDIO/VIDEO COMPONENTS

Press the power switch to the ON position, and turn on the power to the other components required (for example, TV, VCR, cassette deck etc.).

PLAYBACK



1. **Use the INPUT SELECTOR buttons to select the desired program source.**

Program Source	INPUT SELECTOR
To listen to records.	PHONO
To listen to compact discs.	CD
To listen to a tape on the cassette deck (or digital audio tape deck) connected to TAPE 2 MONITOR jacks.	TAPE 2 MONITOR
To listen to a tape on the cassette deck (or digital audio tape deck) connected to TAPE 1/DAT jacks.	TAPE 1/DAT
To watch the TV picture from a TV tuner connected to the TV jacks.	TV
To watch a LaserDisc.	LD
To watch a video cassette tape on the VCR connected to VCR 2 jacks.	VCR 2
To watch a video cassette tape on the VCR connected to VCR 1 jacks.	VCR 1

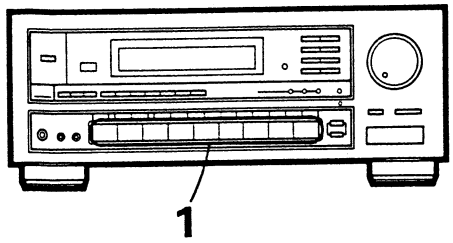
* If a music source other than TAPE 2 is selected, switch OFF the TAPE 2 MONITOR.

2. **Operate the appropriate audio/video component to play back the program source.**
   - For a video source, switch the TV connected to this unit to the video input mode.
3. **Adjust the volume and tone controls as desired.**
   - When listening to a monaural source, turn the SIMULATED STEREO button ON to enjoy simulated stereo sound.
   - Refer to page 26 for details concerning surround operation.
   - Refer to page 26 for details concerning sound quality adjustment.

RECORDING WITH A CASSETTE DECK

RECORDING WITH TAPE 1/DAT

If the TAPE 2 MONITOR button is ON, press to turn OFF.



1. **Select the source you want to record from with the INPUT SELECTOR buttons.**
   - When recording AM or FM broadcasts, press the desired STATION CALL button if the station has been preset. If the desired station has not been preset, tune in the station using Auto, Manual or Direct Access tuning.
2. **Start recording on TAPE 1/DAT cassette deck (or DAT deck).**
3. **Play the desired program source (record, compact disc, etc.).**
   - The volume, balance and tone controls have no effect on the recording.

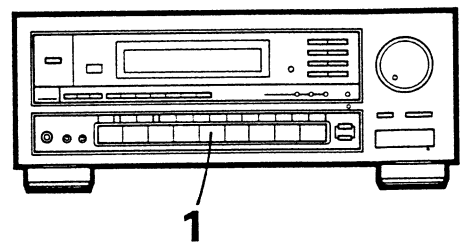
RECORDING WITH TAPE 2

1. **Select the desired source to record from with the INPUT SELECTOR buttons.**
   - Be sure the TAPE 2 MONITOR button is OFF.
2. **Start recording on the TAPE 2 cassette deck.**
3. **Play the desired program source (record, compact disc, etc.).**

USING VCR 1, VCR 2 FOR AUDIO RECORDING

The audio signal output from the VCR 1 and VCR 2 AUDIO REC jacks is the same as that output from the TAPE 1/DAT REC jacks. Record using the same procedure as for recording with TAPE 1/DAT.

COPYING TAPES



The following operation concerns TAPE 1 to TAPE 2 copying. TAPE 2 to TAPE 1 copying is not possible.

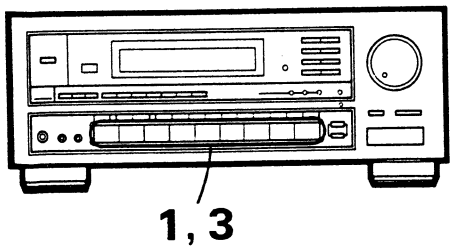
1. **Press the TAPE 1/DAT INPUT SELECTOR button.**
   - If the TAPE 2 MONITOR button is ON, press to turn it OFF.
2. **Load the TAPE 1/DAT cassette deck (or DAT deck) with a tape to playback.**
3. **Load the TAPE 2 cassette deck with a tape to record to.**
4. **Start recording on the TAPE 2 cassette deck.**
5. **Start playback on the TAPE 1/DAT cassette deck (or DAT deck).**

Tape monitoring

When recording is performed on a cassette deck equipped with monitoring function, the recorded sound can be monitored through the speaker system by pressing the TAPE 2 MONITOR button to ON.

VIDEO RECORDING

Refer to the connection procedures on pages 8 to 14 and refer to the VCR's Operating Instructions regarding proper operation procedures. Recording can be performed on both VCR 1 and VCR 2.

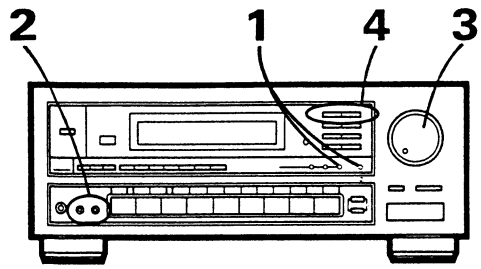


1. **Select the source to record from with the INPUT SELECTOR buttons.**
   - When recording from a LaserDisc on VCR 1 or VCR 2 → LD
   - When recording from a TV tuner on VCR 1 or VCR 2 → TV
   - When recording from VCR 1 on VCR 2 → VCR 1
   - When recording from VCR 2 on VCR 1 → VCR 2
2. **Begin recording on the VCR.**
   - For VCR, select a line input (external input)
3. **Begin playback on the component selected with the INPUT SELECTOR.**

DOLBY PRO LOGIC SURROUND AND DOLBY 3CH LOGIC

Use with video or audio software bearing the DOLBY SURROUND mark.
Use DOLBY PRO LOGIC SURROUND when rear speakers are connected, and DOLBY 3CH LOGIC when rear speakers are not connected.
For correct surround reproduction, be sure to perform following adjustments.

LEVEL ADJUSTMENT



1. **Use SURROUND MODE buttons to select DOLBY PRO LOGIC SURROUND or use the DOLBY 3CH LOGIC button to switch DOLBY 3CH LOGIC ON.**
2. **Use SPEAKERS button to turn on front speakers.**
3. **Adjust MASTER VOLUME to a suitable listening level.**
4. **Press BALANCE L and R buttons together.**
5. **Select the CENTER MODE (NORMAL, WIDE, PHANTOM) setting with the remote control CENTER MODE button.**
6. **Press the remote control TEST TONE button.**
7. **With the remote control BALANCE (L, R), CENTER LEVEL (+, −), and REAR LEVEL (+, −) buttons, adjust the test tone volume level so that is the same from each speaker.**
8. **Press the remote control TEST TONE button to switch the test tone OFF.**

NOTE:
- *The TEST TONE turns off if you operate the INPUT SELECTOR.*
- *CENTER MODE PHANTOM selection and REAR LEVEL adjustment are not possible during DOLBY 3CH LOGIC operation.*

OPERATION

1. **Select DOLBY PRO LOGIC SURROUND with the SURROUND MODE buttons, or select DOLBY 3CH LOGIC.**
2. **Select the component for playback with the INPUT SELECTOR buttons.**
3. **Select the center mode with the remote control CENTER MODE button.**
4. **Begin playback.**
5. **Adjust volume level with the MASTER VOLUME control.**

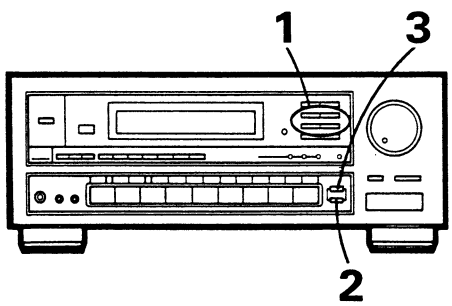
SETTING THE DELAY TIME

When using DOLBY PRO LOGIC SURROUND, set the delay time between 16 ms and 30 ms (2 ms step). The standard setting is 20 ms, but select any desirable setting.
When the DELAY TIME button on the main unit or remote control is pressed, DELAY lights in the display section, with numerical indication of the delay time.

HOW TO USE THE ACOUSTIC MEMORY

Memorized tone settings can be recalled using the SELECT button. Up to five different tone settings can be memorized.

Setting the Acoustic Memory



1. **Adjust the sound quality as desired using the BASS and TREBLE control buttons.**
   - Settings shown by the TONE level indicator on the display section.
2. **Press the MEMORY button.**
   - The acoustic memory letters on the display section blink on and off.
3. **Press the SELECT button and select the acoustic memory to assign the setting (A — E).**
   - The sound quality setting is memorized approximately five seconds after the SELECT button is pressed.

In this way, the desired tone will be preset in one of the five acoustic memory positions. To preset four other desired tone settings, perform the same operations.

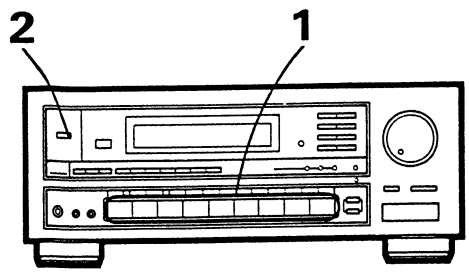
Recalling tone setting in the Acoustic Memory

To recall the memorized tone settings, press the SELECT button to select the desired memory position.

FLAT → LOUDNESS → A → B → C → D → E

FLAT: For flat (normal) frequency response.
LOUDNESS: Emphasizes the low- and high-frequency ranges. Produces a fuller sense of sound, particularly when listening at low volume.
A — E: Memorized acoustic memory settings.

USING THE VIDEO SIGNAL SELECTOR



This function can be used to listen to the playback sound while changing the video image only, thus allowing playback and record video images different from the playback sound source.

1. **Select the desired component with the INPUT SELECTOR buttons.**
   - When listening to (or recording) AM or FM broadcasts, press the desired STATION CALL switch if the station has been preset. If the desired station has not been preset, tune in the station using Auto or Manual Direct Access tuning.
2. **Select the desired video component to view with the V-SIGNAL SELECTOR button.**
   - It is indicated in the VIDEO SIGNAL display section.
3. **Start playback of the component selected with the INPUT SELECTOR buttons, and the component selected with the V-SIGNAL SELECTOR button.**

[Recording to a VCR]
Carry out the following after completing procedure 3.

① **Insert a video cassette tape into the VCR to be used for recording.**

② **Set the recording VCR to the recording mode.**

③ **Start playback of the component selected with the INPUT SELECTOR buttons, and the component selected with the V-SIGNAL SELECTOR button.**

CAUTION:

To operate the V-SIGNAL SELECTOR button during recording, first set the recording VCR to the pause mode. If the button is operated when the tape is traveling during recording, the recorded image and sound may be disrupted at the point at which the button is operated.

USING THE AUTO SOURCE CONTROL

To memorize receiver settings, and recall at the touch of a button. Two memory buttons are available.

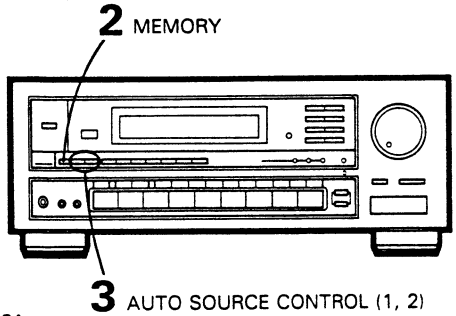
If a component bearing the Pioneer SR mark is connected, such as a CD player, to the CONTROL OUT jack on the rear panel, signals can also be transmitted to automatically switch on power and start play of that component.

NOTE:

With some components, even if they bear the SR mark, power cannot be switched on and off by remote control.

[Operating Memory]

1. **Select the settings on the receiver to be memorized.**
2. **Press the MEMORY button.**
   - After the "AUTO SOURCE CONTROL" indication has scrolled in the display, "MEMORY" appears and flashes.
3. **Press the AUTO SOURCE CONTROL button (1 or 2) to use for memorizing.**



Example:

Using the AUTO SOURCE CONTROL 1 button to memorize settings to start play on a CD player connected to the receiver's CONTROL OUT jack.

1. **Set the receiver INPUT SELECTOR to CD.**
2. **Adjust tone, surround, and other parameters to the settings to be memorized.**
3. **Set the volume to the level to be memorized.**
4. **Press the MEMORY button.**
5. **Press the AUTO SOURCE CONTROL 1 button.**

[Recalling]

Press the AUTO SOURCE CONTROL button (1 or 2) for the settings to be recalled.

Remote control AUTO SOURCE CONTROL buttons (1 or 2) can also be used to recall settings.

"AUTO SOURCE CONTROL 1 (or 2)" is scroll displayed. After the last indication, such as "PLAY CD" has been scroll displayed, the display switches to function indications.

In the case of the example, the following operations are performed.

① Press the AUTO SOURCE CONTROL 1 button.

② Power to the receiver switches ON, the INPUT SELECTOR selects CD, settings for such parameters as surround, and tone are called up, and power to the CD player is switched ON.

③ Play starts on the CD player.

④ Volume level is raised by the MASTER VOLUME on the receiver.

NOTE:

- *Memorized volume level and recall volume level may differ by a small amount.*
- *If volume is near minimum level when memorized, volume may not rise when the setting is recalled.*

NOTE:

- *Since the power ON and play signals for components bearing the SR mark called by Auto source control are output through this unit's CONTROL OUT jack, be sure to connect the control cord (refer to page 20).*
- *With some components, even if they bear the SR mark, power cannot be switched on and off by remote control. If this is the case, by connecting the other unit's power cord to this unit's SWITCHED AC OUTLET, and leaving the other unit's power switch ON, power switching will depend on whether this unit is on or off.*
- *Volume level can not be raised above the center setting.*
- *AUTO SOURCE CONTROL memory stores the receiver settings at that point in time; it does not memorize STATION CALL numbers (1—30), CUSTOM MEMORY, or ACOUSTIC MEMORY (A—E, LOUDNESS, FLAT).*
- *During operation of AUTO SOURCE CONTROL, other components are also being controlled, so do not perform other operations until it is finished.*

With auto source control, power ON/OFF signals and play signals are output from the CONTROL OUT jack at the times shown in the following chart.

Function at the time of memorizing	POWER signal	PLAY signal
PHONO	—	Yes
TUNER	No	No
CD	Yes	Yes
TAPE 1	Yes	Yes
TAPE 2	Yes	Yes
VCR 1	Yes (VCR, TV)	Yes (VCR PLAY, TV FUNC "LD")
VCR 2	Yes (VCR, TV)	Yes (VCR PLAY, TV FUNC "LD")
LD	Yes (LD, TV)	Yes (LD PLAY, TV FUNC "LD")
TV	Yes (TV)	Yes (TV FUNC "TV")

Example of AUTO SOURCE CONTROL 1, 2 memory:

AUTO SOURCE CONTROL	Volume	Input selector	Surround mode
1	7	CD	DOLBY PRO LOGIC SURROUND
2	10	TV	STUDIO

HINTS FOR BETTER RECEPTION

EXTERNAL FM ANTENNA

The main advantage of FM over AM is the quality of the broadcast signal. In order to benefit fully from the high signal quality of FM broadcasts, it is recommended that a special-purpose FM antenna be installed. In weak signal areas, a multi-element (3-element, 5-element, 7-element) antenna should be used.

GROUNDING

Grounding is recommended if reception of FM programs is impaired by noise. To ground, connect a thick polyvinyl insulated wire to the GND terminal and attach the other end to a metal water pipe or grounding bar or wind it around a copper plate and bury it.

NOTE:

Never connect a wire to a gas pipe for grounding since sparks may ignite the gas.

EXTERNAL AM ANTENNA

If it is not possible to obtain adequate AM reception even by changing the orientation of the AM loop antenna, a separate indoor antenna or an outdoor antenna should be installed.

INDOOR AM ANTENNA

Use a vinyl-insulated wire (5 — 6 m:17 — 20 feet) and connect one end to the AM antenna terminal and affix the other end to the wall or ceiling, as high as possible.

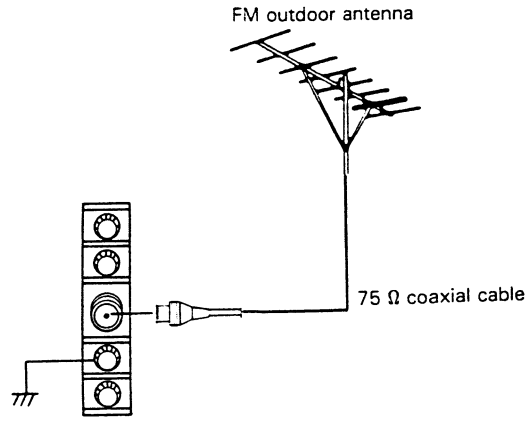
OUTDOOR AM ANTENNA

If reception quality is not improved sufficiently even when an indoor antenna is used, a vinyl-insulated wire should be installed outside and fixed in place.

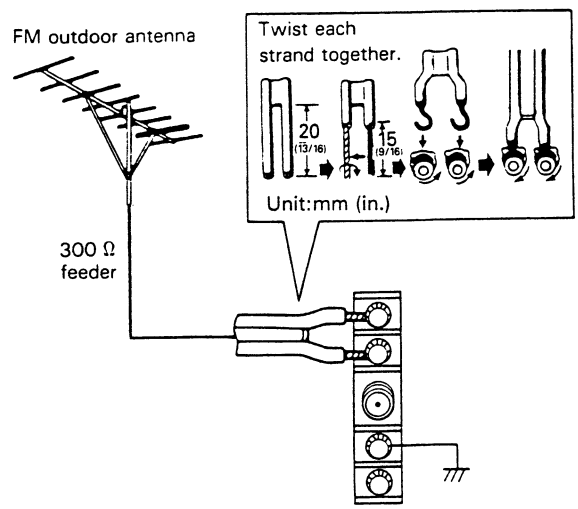
NOTE:

Do not detach the AM loop antenna when using an indoor or an outdoor AM antenna.

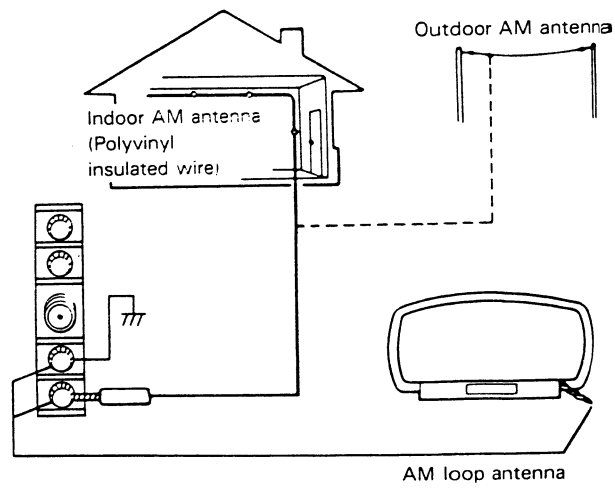
Connecting the 75 Ω coaxial cable



Connecting the 300 Ω feeder



AM antenna connection

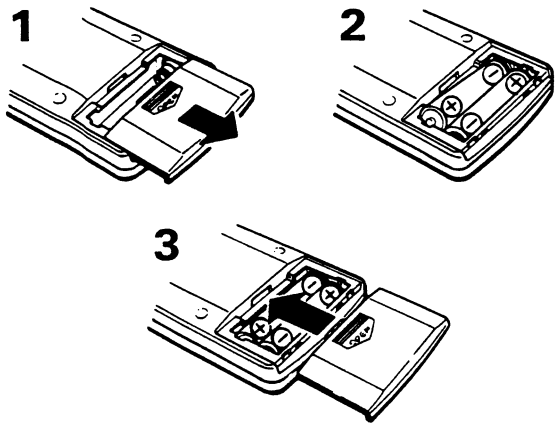


VSX-502 REMOTE CONTROL OPERATION

Refer to p.35 for an explanation of VSX-512S remote control operation.

LOADING BATTERIES

1. **Open the rear cover.**
2. **Install size "AAA" (R03/UM-4) batteries, correctly matching polarity.**
3. **Close the cover.**



Incorrect use of batteries may lead to leakage or rupture. Always be sure to follow these guidelines:

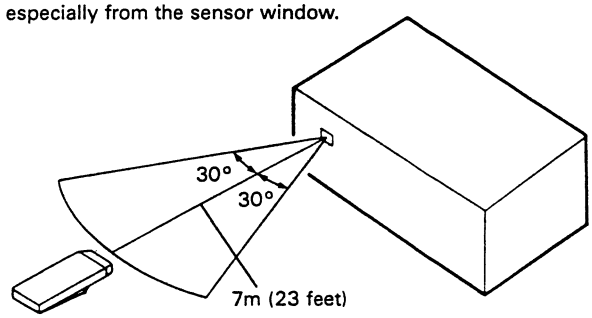
A.
Always insert batteries into the battery compartment correctly matching the positive (+) and negative (−) polarities, as indicated inside the compartment.

B.
Never mix new and used batteries.

C.
Batteries of the same size may have different voltages, depending on their type. Do not mix different types of batteries.

REMOTE CONTROL RANGE

When operating the remote control unit, point the front of the unit at the front panel of the receiver. The remote control unit may be used within a range of about 7 meters (23 feet) from the remote sensor, within angles of up to about 30 degrees.
Performance of the remote control unit is adversely affected in the presence of strong fluorescent light. Keep such lights away, especially from the sensor window.



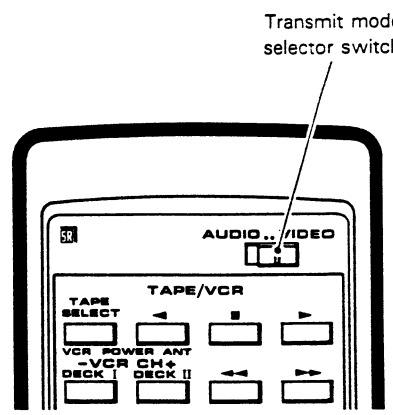
Battery Replacement

When the batteries have run out, the transmit indicator will not illuminate even when a button is pressed. Be sure to replace the batteries as soon as possible.
Also, be sure to always use the specified batteries (R03/UM-4 batteries).

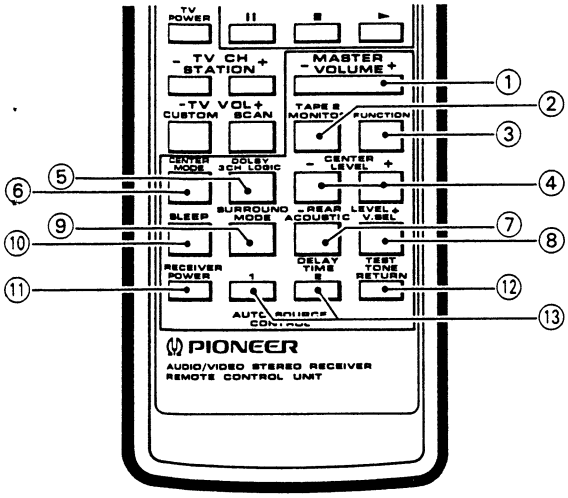
Transmit mode selector switch

AUDIO:
Select this position for remote control operation of audio equipment such as a CD player, cassette deck or receiver.
VIDEO:
Select this position for remote control operation of video equipment such as a LD player, VCR or TV.

AUDIO mode functions are displayed in black letters, but VIDEO mode functions are displayed in green letters.



RECEIVER AMPLIFIER SECTION OPERATION



① MASTER VOLUME (+, −) button
Adjusts the overall volume.

② TAPE 2 MONITOR button
Switches the receiver or amplifier TAPE 2 MONITOR on and off.

③ FUNCTION button
Each press changes the receiver or amplifier input in sequence.

④ CENTER LEVEL (+, −)/REAR LEVEL (+, −) buttons
[Transmit mode: AUDIO]
Adjust the center speaker sound level.
[Transmit mode: VIDEO]
Adjust the sound level of the rear speakers to the level of the front speakers.

⑤ DOLBY 3CH LOGIC button
Switches DOLBY 3CH LOGIC on and off.

⑥ CENTER MODE button
When DOLBY PRO LOGIC SURROUND or DOLBY 3CH LOGIC are ON, use to switch the center mode.
[DOLBY PRO LOGIC SURROUND]

→ NORMAL → WIDE →
PHANTOM ←

[DOLBY 3CH LOGIC]

→ NORMAL → WIDE →

⑦ ACOUSTIC/DELAY TIME select button
[Transmit mode: AUDIO]
The acoustic setting changes in the following manner each time this button is pressed

→ FLAT → LOUDNESS →
E ← D ← C ← B ← A ←

[Transmit mode: VIDEO]
Switches the delay time for surround each time it is pressed.

During DOLBY PRO LOGIC SURROUND and SIMULATED SURROUND operation, delay time settings can be changed from 16 ms to 30 ms in 2 ms steps.
The DELAY TIME button does not work with STUDIO and DOLBY 3CH LOGIC.

⑧ V-SEL (VIDEO SIGNAL SELECTOR)/TEST TONE button
[Transmit mode: AUDIO]
This switches just the video signal in sequence, leaving the sound unchanged.

→ VCR 1 → VCR 2 → LD → TV → OFF →

[Transmit mode: VIDEO]
Operates when the DOLBY PRO LOGIC SURROUND or DOLBY 3CH LOGIC mode is selected.
When the test tone is ON, TEST is displayed in the display section, and the test tone is output through each speaker in turn for about two seconds.

⑨ SURROUND MODE button
The surround mode is switched in the following manner each time the button is pressed:

→ STUDIO → SIMULATED SURROUND → OFF →
DOLBY PRO LOGIC SURROUND ←

⑩ SLEEP timer button
Activates the SLEEP timer. The length changes in the following manner each time the button is pressed:

→ 90 → 60 → 30 → 0 (OFF) →
Unit: minutes

When SLEEP is ON, the display section is about half as bright as when SLEEP is OFF.

⑪ RECEIVER POWER button
Switches the receiver power ON/STANDBY.

⑫ RETURN button
Press the RETURN button to return the receiver to the initial state. TUNER is selected at this initial state. Adjust the sound level with the MASTER VOLUME buttons.

- TAPE 2 MONITOR ..... OFF
- SURROUND MODE ..... OFF
- MUTING ..... OFF
- FRONT BALANCE .. CENTER
- FUNCTION ..... TUNER
- V-SIGNAL SELECTOR .. OFF
- TONE ..... flat

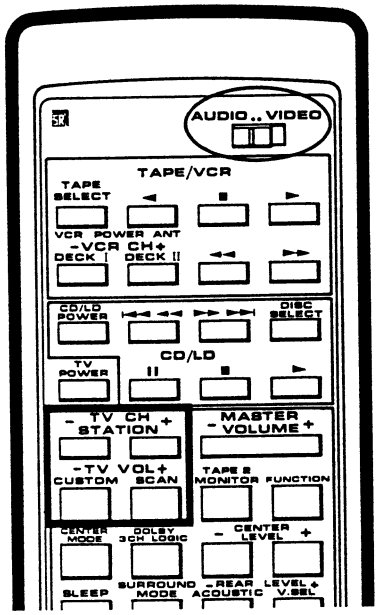
The HITS function searches for broadcast stations among the frequencies displayed.

NOTE:
If no sound is output after the RETURN button is pressed, make sure that SPEAKERS buttons are turned on.

⑬ AUTO SOURCE CONTROL 1, 2 buttons
Use to recall settings memorized in the receiver AUTO SOURCE CONTROL buttons 1 and 2.

- AUDIO mode operation buttons are indicated by white characters, and VIDEO mode operation buttons are indicated by green characters.

RECEIVER TUNER SECTION OPERATION



Set the Transmit mode selector switch to AUDIO.

AUDIO .. VIDEO

TUNER function buttons (operation of FM/AM Tuner)

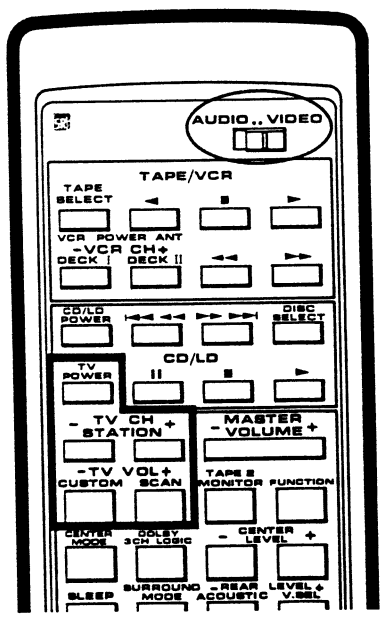
STATION + (UP) button:
Shifts the station call no. up.

STATION − (DOWN) button:
Shifts the station call no. down.

CUSTOM button:
Press to recall a custom memory genre name.

SCAN button:
Press to operate memory scan.
If this button is pressed after pressing the CUSTOM button to display custom memory genre names, such as ROCK and JAZZ, the STATION CALL NO.s of the selected genre name will be scanned.

TV OPERATION



Set the Transmit mode selector switch to VIDEO.

AUDIO .. VIDEO

TV function buttons (operation of component display or projection monitor receiver)

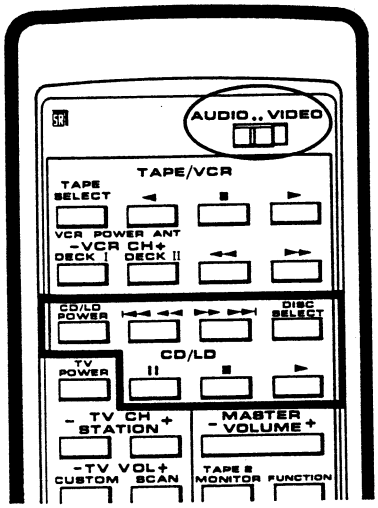
TV-POWER button:
Switches the power of the TV ON/OFF.

TV CH (CHANNEL) + (UP) button:
Changes the channel in the direction of larger CHANNEL CALL DIGIT numbers.

TV CH (CHANNEL) − (DOWN) button:
Changes the channel in the direction of smaller CHANNEL CALL DIGIT numbers.

TV-VOL +, − buttons:
Raises and lowers the volume.

CD PLAYER OPERATION



Set the Transmit mode selector switch to AUDIO.

CD Function buttons (Operation of CD player)

CD POWER button:
Switches CD player power ON/OFF.
This only applies to CD players which can switch ON/OFF by remote control operation.

⏮ **(TRACK SEARCH) button:**
Returns to the beginning of the track currently playing.

⏭ **(TRACK SEARCH) button:**
Advances to the next track.

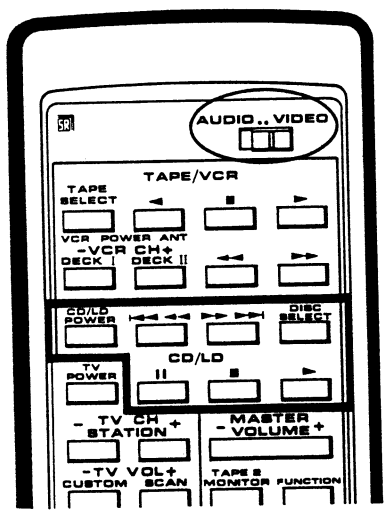
DISC SELECT button:
Selects the DISC No. for multi-play compact disc players or twin-tray compact disc player.

⏸ **(PAUSE) button:**
Pauses playback.

■ **(STOP) button:**
Stops playback.

► **(PLAY) button:**
Selects playback.

LD OPERATION



Set the Transmit mode selector switch to VIDEO.

LD function buttons (operation of LD player)

LD POWER button:
Switches LD player power ON/OFF.
This only applies to an LD player which can switch ON/OFF by remote control operation.

DISC SELECT button:
Selects the CD DISC No. for Multi-play CD CDV/LD player.

◄◄ **(SCAN) button:**
Selects fast backward.

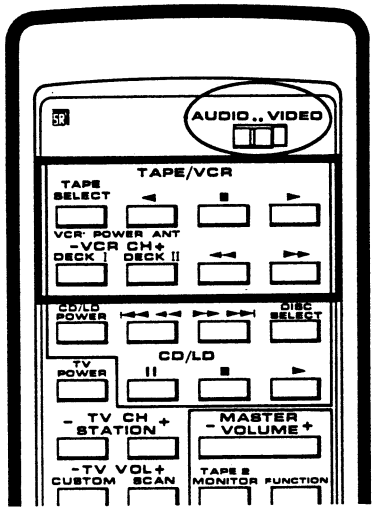
►► **(SCAN) button:**
Selects fast forward.

⏸ **(PAUSE) button:**
Video and audio are stopped and playback is paused.

■ **(EJECT) button:**
Playback is stopped when pressed once. Pressing again causes the disc table to come out.

► **(PLAY) button:**
Selects playback.

CASSETTE DECK OPERATION



Set the Transmit mode selector switch to AUDIO.

TAPE function buttons (Operation of cassette deck)

TAPE SELECT button:
Selects the cassette No.(1 to 6) for a multi-cassette changer.

◄ **(PLAY) button:**
Selects reverse playback.

■ **(STOP) button:**
Stops the tape transport.

► **(PLAY) button:**
Selects forward playback.

DECK I button:
Switches to the Deck I functions when using a double cassette deck.

DECK II button:
Switches to the Deck II functions when using a double cassette deck.

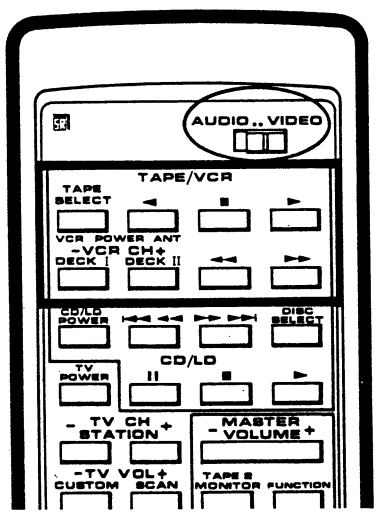
◄◄ **(FF) button:**
Rapidly advances the tape in the direction of the arrow.

►► **(FF) button:**
Rapidly advances the tape in the direction of the arrow.

NOTE:

- *Some cassette decks cannot be controlled using these buttons.*
- *The ◄ button can only be used with cassette decks capable of reverse play.*
- *Some buttons will not work with all types of cassette decks. Refer to the operating instructions for your cassette deck.*

VCR OPERATION



Set the Transmit mode selector switch to VIDEO.

VCR function buttons (operation of VCR)

VCR POWER button:
Switches VCR power ON/OFF.

ANT button:
This button can be used only for VCRs with a VCR/TV selector.
Toggles the antenna output between VCR and TV.

■ **(STOP) button:**
Stops tape transport.

► **(PLAY) button:**
Selects playback.

VCR CH – (DOWN) button:
Shifts channels in descending order.

VCR CH + (UP) button:
Shifts channels in ascending order.

◄◄ **(REW) button:**
Rewinds the tape and allows picture search.

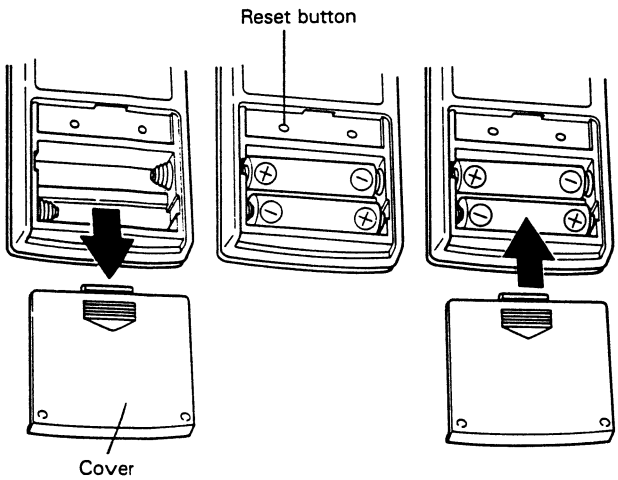
►► **(FF) button:**
Rapidly advances the tape and allows picture search.

VSX-512S REMOTE CONTROL OPERATION

Refer to P.30 for an explanation of VSX-502 remote control operation.

LOADING BATTERIES

1. **Open the battery compartment cover on the rear of the remote control unit. The cover should open easily by sliding it in the direction of the arrow while pressing on it.**
2. **Take out the two supplied batteries (IEC LR6/AM-3), and insert them into the battery compartment in accordance with the indications in the compartment.**
3. **Press the reset button.**
4. **Close the cover of the battery compartment.**



Incorrect use of batteries may lead to leakage or rupture. Always be sure to follow these guidelines:

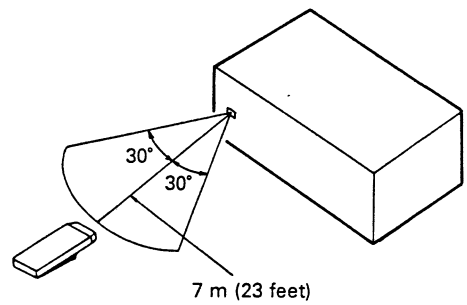
A.
Always insert batteries into the battery compartment correctly matching the positive + and negative — polarities, as indicated inside the compartment.

B.
Never mix new and used batteries.

C.
Batteries of the same size may have different voltages, depending on their type. Do not mix different types of batteries.

REMOTE CONTROL RANGE

When operating the remote control unit, point the front of the unit at the front panel of the receiver. The remote control unit may be used within a range of about 7 meters (23 feet) from the remote sensor, within angles of up to about 30 degrees.
Performance of the remote control unit is adversely affected in the presence of strong fluorescent light. Keep such lights away, especially from the sensor window.



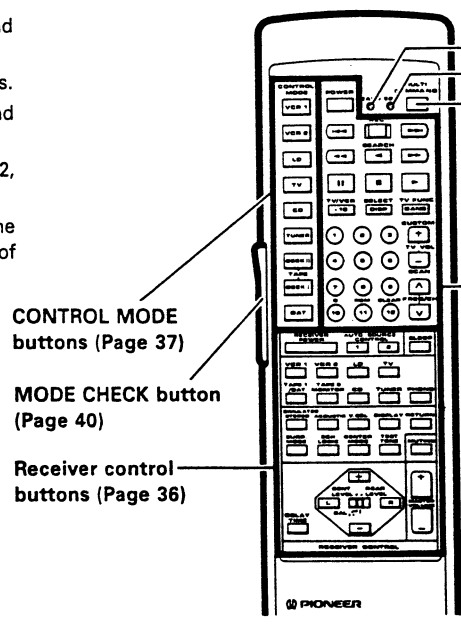
Battery Replacement

When the batteries have run out, the CONTROL MODE buttons will not light properly. If left like this, programs will be erased, so be sure to replace the batteries as soon as possible. Remove the old batteries only if they can be replaced by new ones immediately.
Also, be sure to always use the specified batteries (size "AA" (IEC LR6/AM-3) alkaline batteries).

NOTE:
When no batteries are inserted, the programmed memory contents will be erased after about 30 minutes.
To clear the Programmed memory, refer to page 43. The memory cannot be cleared simply by removing the batteries.

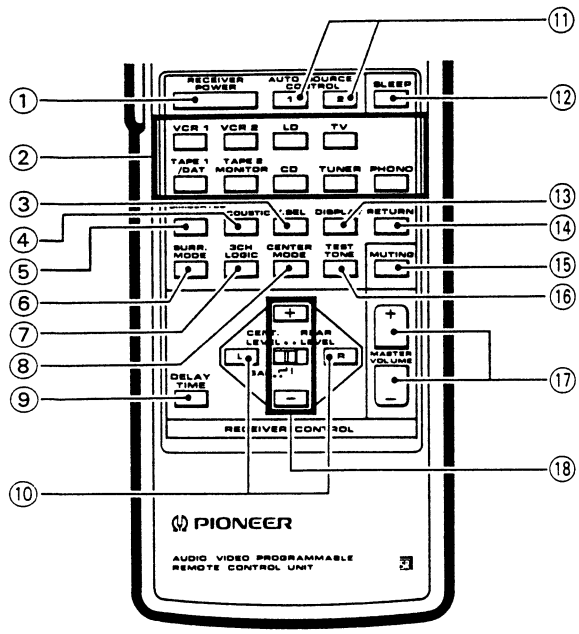
OUTLINE OF BUTTON LAYOUT

- The buttons on the lower half of the remote control command receiver functions.
- Buttons on the upper half are used to operate other components.
- Operation buttons for other components can learn the command signals of other remote control units.
- There are 12 kinds of preset signals for operation of VCR 1, VCR 2, and TV. Select and use one of them.
- A maximum of seven commands can be programmed into the MULTI COMMAND button, enabling transmission of a sequence of commands at the push of a button.


LEARN button (Page 41)
EDIT button (Page 41)
MULTI COMMAND button (Page 43)
Operation buttons (Page 37)
These buttons can be programmed with commands of other remote control units. (Page 41)
CONTROL MODE buttons (Page 37)
MODE CHECK button (Page 40)
Receiver control buttons (Page 36)

The initial functions can operate all products compatible with PIONEER's common system remote control units marked with the symbol SR.

RECEIVER CONTROL BUTTONS



① **RECEIVER POWER button**
Switches the receiver power between ON and STANDBY.

② **Input selector buttons**
Press when switching the receiver's INPUT SELECTOR.
The CONTROL MODE also switches to the same component (except PHONO) (One CONTROL MODE button lights)
Pressing TAPE 1/DAT, TAPE 2 MONITOR, causes the CONTROL MODE DECK II button to light.

③ **V. SEL (VIDEO SIGNAL SELECTOR) button**
This switches just the video signal in sequence, leaving the sound unchanged.

VCR 1 → VCR 2 → LD → TV → OFF

④ **ACOUSTIC select button**
The acoustic setting changes in the following manner each time this button is pressed.

FLAT → LOUDNESS → A → B → C → D → E

⑤ **SIMULATED STEREO button**
When playing back a monaural source, press to switch the simulated stereo function ON/OFF.

⑥ **SURR. (SURROUND) MODE button**
The surround mode is switched in the following manner each time the button is pressed:

STUDIO → SIMULATED → OFF → DOLBY PRO LOGIC SURROUND

⑦ **3CH LOGIC button**
Switches DOLBY 3CH LOGIC on and off.

⑧ **CENTER MODE button**
When DOLBY PRO LOGIC SURROUND or DOLBY 3CH LOGIC are ON, use to switch the center mode.

[DOLBY PRO LOGIC SURROUND]

NORMAL → WIDE → PHANTOM

[DOLBY 3CH LOGIC]

NORMAL → WIDE

⑨ **DELAY TIME button**
During DOLBY PRO LOGIC SURROUND and SIMULATED SURROUND operation, delay time settings can be changed from 16 ms to 30 ms in 2 ms steps.
The DELAY TIME button does not work with STUDIO and DOLBY 3 CH LOGIC.

⑩ **BALANCE (L, R) buttons**
Operate after switching the selector ⑱ to the left side (BAL display side).

⑪ **AUTO SOURCE CONTROL buttons**

⑫ **SLEEP timer button**
Activates the SLEEP timer. The length changes in the following manner each time the button is pressed.

90 → 60 → 30 → 0 (OFF)
Unit: minutes

When SLEEP is ON, the display section is about half as bright as when SLEEP is OFF.

⑬ **DISPLAY button**
Does not operate with this unit.

⑭ **RETURN button**
Press the RETURN button to return the receiver into the initial state. TUNER is selected at this initial state. Adjust the sound level by using the MASTER VOLUME buttons.

- TAPE 2 MONITOR..... OFF
- SURROUND MODE..... OFF
- MUTING..... OFF
- FRONT BALANCE... CENTER
- FUNCTION ..... TUNER
- V-SIGNAL SELECTOR... OFF
- TONE..... flat

The HITS function searches for broadcast stations among the frequencies displayed.

NOTE:
If no sound is output after the RETURN button is pressed, make sure that SPEAKERS buttons are turned on.

⑮ **MUTING button**
Used to temporarily mute the sound.
The volume is restored when pressed again.

⑯ **TEST TONE button**
Use to adjust the test tone volume level from each speaker.
Operates when the DOLBY PRO LOGIC SURROUND or DOLBY 3CH LOGIC mode is selected.
When the test tone is switched ON, TEST is displayed in the display section, and the test tone is output through each speaker in turn for about two seconds. Adjust volume level so that it is the same from each speaker.

⑰ **MASTER VOLUME (+, –) buttons**
Adjusts the overall volume.

⑱ **REAR LEVEL/CENTER LEVEL (+, –) buttons and select switch**
[Select switch: REAR LEVEL]
Adjusts the sound level of the rear speakers to the level of the front speakers.
[Select switch: CENT. LEVEL]
Adjusts the center speaker sound level.

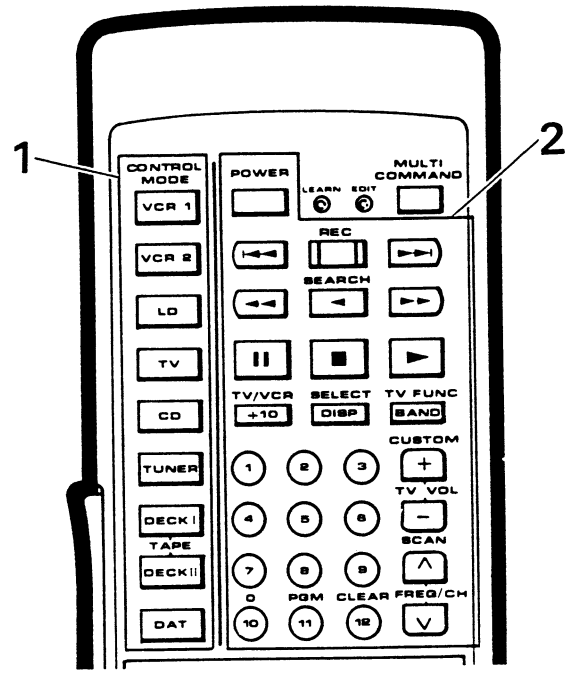
OPERATING OTHER COMPONENTS

REMOTE CONTROLLING OF OTHER AUDIO-VISUAL COMPONENTS VIA THIS UNIT REQUIRES:

1. All components must be remote controllable (have a sensor window on the front panel) to receive direct command from this unit, upon successful learning of those commands by this programmable unit or,
2. All units must have remote control jacks (IN/OUT) on the rear panel and be correctly connected to the receiver according to the diagram on page 20.

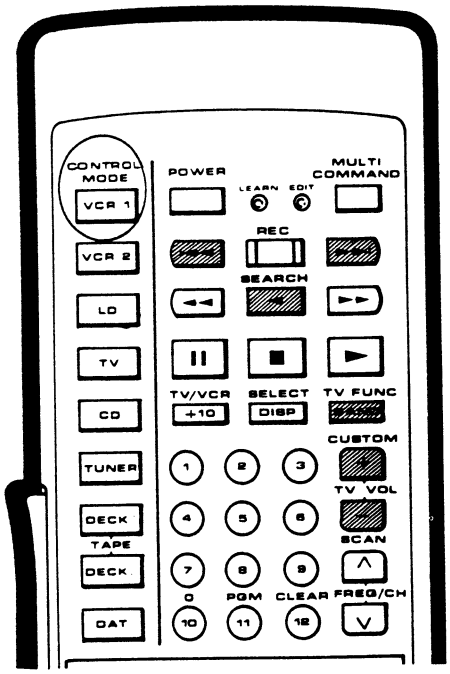
When operating components other than the receiver:

1. **Press the CONTROL MODE buttons for the component to be operated.**
2. **Press the operation button.**



▨ buttons do not operate in the selected CONTROL MODE.

VCR 1 operation



(With VCR 2, even if an operation button is pressed, no signal is transmitted. Preset or program to use.)

POWER button:
Switches VCR power ON/OFF.

REC (REC) button:
Selects the recording mode.

◄◄ **(REW) button:**
Rewinds the tape and allows picture search.

►► **(FF) button:**
Rapidly advances the tape and allows picture search.

II **(PAUSE/STILL) button:**
Sets pause and still picture.

■ **(STOP) button:**
Stops tape transport.

► **(PLAY) button:**
Selects playback.

TV/VCR button:
This button can be used only for VCRs with a TV/VCR selector.
Toggles the antenna output between TV and VCR.

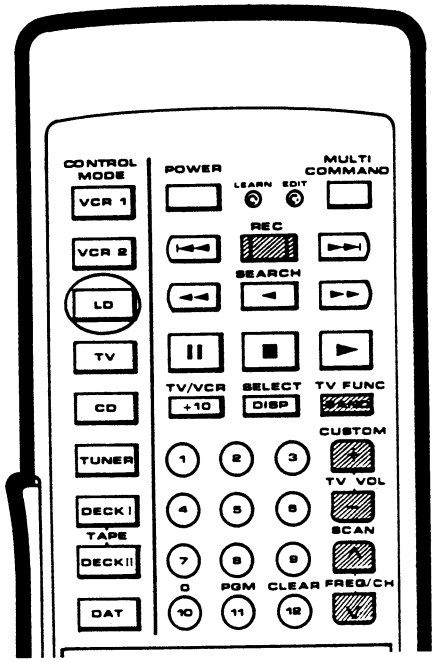
DISP (DISPLAY) button:
Switches TV screen display ON/OFF.

1—12 buttons:
Use to call up channels.

CH ∧ button:
Shifts channels in ascending order.

CH ∨ button:
Shifts channels in descending order.

LD player operation



POWER button:
Switches LD player power ON/OFF.

|◄◄ (CHAPTER SKIP) button
Searches for the start of the chapter playing.

►►| (CHAPTER SKIP) button
Searches for the start of the next chapter.

SEARCH button:
Used for the search operation and for the memory repeat operation.

◄◄ (SCAN) button:
Selects fast backward.

►► (SCAN) button:
Selects fast forward.

II (PAUSE) button:
Video and audio are stopped and playback is paused.

■ (STOP/EJECT) button:
Playback is stopped when pressed once. Pressing again causes the disc tray to come out.

► (PLAY) button:
Selects playback.

+10 button:
Use to input such information as chapter numbers higher than 10.

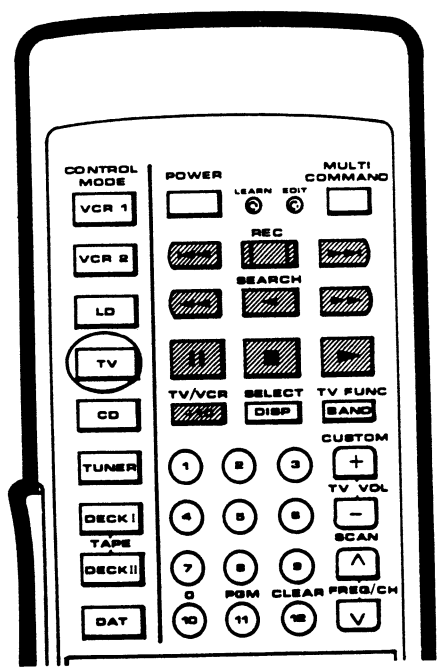
DISP (DISPLAY) button:
Switches TV screen display of chapter, frame/time number ON/OFF.

1–10 buttons:
Used for chapter and frame/time number search and for chapter program play.

PGM (PROGRAM) button:
Allows use of chapter program play.

CLEAR button:
Used for releasing repeat playback, number correction and mode release during search operation, and for releasing chapter program play.

TV operation



POWER button:
Switches the power of the TV ON/OFF.

DISP (DISPLAY) button:
TV image display ON/OFF.

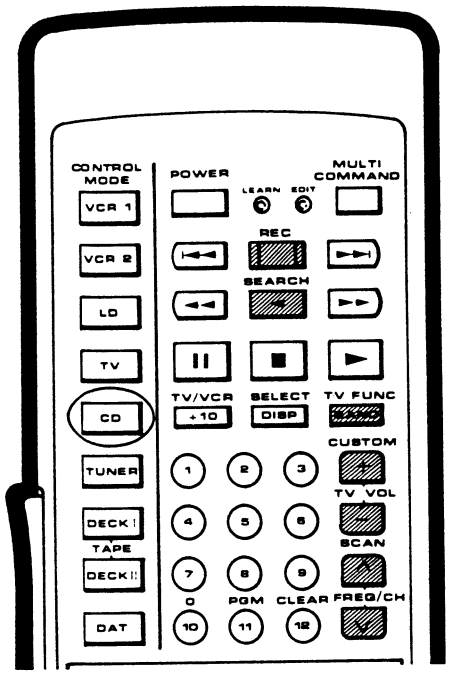
TV FUNC (TV FUNCTION) button:
Used to change the TV FUNCTION.
• The TV FUNC button cannot be used with some Pioneer TVs.

1–12 buttons:
Used to call up channels.

TV VOL (+, –) buttons:
Raises and lowers the volume.

CH ∧, ∨ buttons:
Changes the channel in the direction of larger (∧) and smaller (∨) channel numbers.

CD player operation



POWER button:
Switches CD player power ON/OFF.

⏮ **(TRACK SEARCH) button:**
Returns to the beginning of the track currently playing.

⏭ **(TRACK SEARCH) button:**
Advances to the next track.

◀◀ **(MANUAL SEARCH) button:**
Selects fast backward.

▶▶ **(MANUAL SEARCH) button:**
Selects fast forward.

⏸ **(PAUSE) button:**
Pauses playback.

■ **(STOP) button:**
Stops playback.

▶ **(PLAY) button:**
Selects playback.

+10 button:
Use when selecting a track number higher than 10. For example, to select 21, press the [+10] button twice and then the [1] button. This button cannot be used with some CD players.

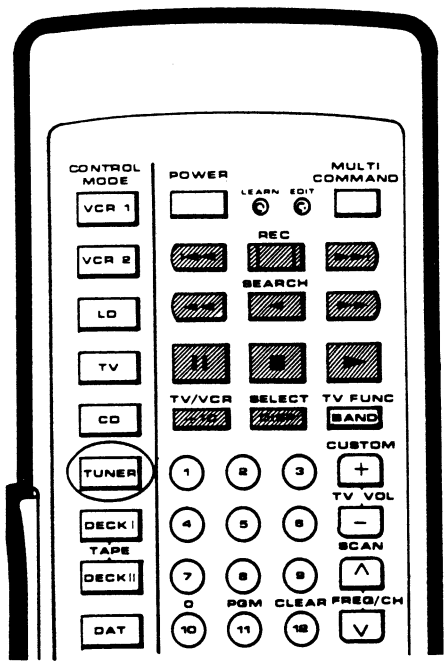
SELECT button:
Selects the DISC No. (1 to 6) for Multi-play CD players.

1—10 buttons:
For direct selection of a track or programming of tracks.

PGM (PROGRAM) button:
Press to program the CD player.

CLEAR button:
Erases a memorized program.

Tuner operation (The receiver tuner section can also be operated when TUNER is selected)



1—12 buttons:
For recall of tuner presets.
Buttons 1 to 10 are used for the receiver (Buttons 11 and 12 cannot be used).

BAND button:
Switches the FM and AM bands in turn.

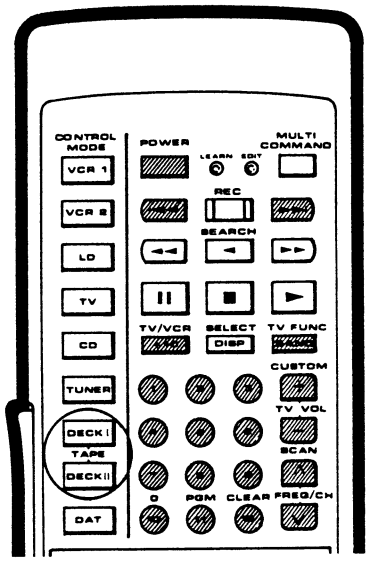
CUSTOM button:
Press to recall a custom memory genre name.

SCAN button:
Press to operate memory scan.
Press this button after pressing the CUSTOM button to display custom memory genre names, such as ROCK and JAZZ, the STATION CALL NO.s of the selected genre name will be scanned.

FREQ ∧, ∨ buttons:
Shifts the frequency up (∧) and down (∨).

POWER button:
Switches tuner power ON/OFF.

DECK I, II operation



When using a single cassette deck, select DECK II.

REC **(REC) button:**
Selects the recording or recording standby mode.

◄◄, ►► **(FF) buttons:**
Rapidly advances the tape in the direction of the arrow.

◄ **(PLAY) button:**
Selects reverse playback.

II **(PAUSE) button:**
Temporarily stops tape transport. Press again to resume tape transport.

■ **(STOP) button:**
Stops the tape transport.

► **(PLAY) button:**
Selects forward playback.

SELECT button:
Selects the cassette No. (1 to 6) for multi-cassette changer.

DAT (Digital Audio Tape deck) operation

POWER:
Switches DAT deck power ON/OFF.

REC **(REC):** Selects the recording mode.

◄◄ **(REW):** Rewind.

►► **(FF):** Fast forward.

II **(PAUSE):** Temporarily stops tape transport. Press again to resume tape transport.

■ **(STOP):** Stops the tape transport.

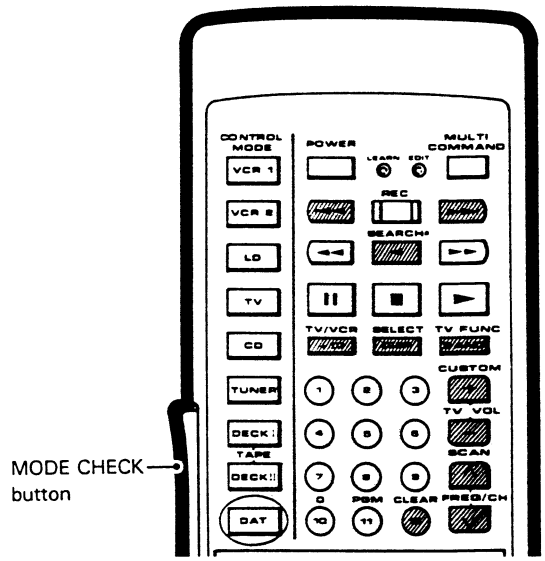
► **(PLAY):** Playback.

1—10: 1 to 10: Use to input numbers.

PGM: Use to playback a program.

MODE CHECK button

When you press the MODE CHECK button, the button for the present CONTROL MODE (for example, LD) lights. If you continue pressing the button, the CONTROL MODE changes in sequence.



PROGRAMMING

The LEARN mode and the EDIT mode are available for programming. In the EDIT MODE, there is a PRESET mode and a MULTI-EDIT mode.

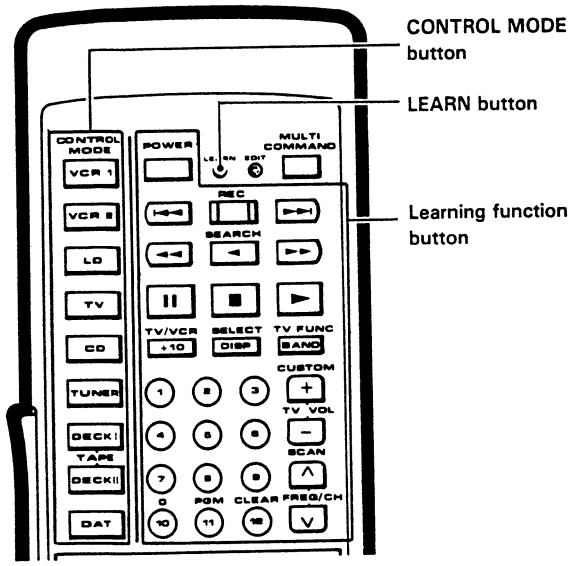
- **LEARN MODE:** In each CONTROL MODE, a single remote control signal can be input into each of the operation buttons.
- **EDIT MODE**
  PRESET MODE: In the VCR 1, VCR 2, or TV CONTROL MODE, select and use one of the 12 kinds of preset remote control signals.
  MULTI-EDIT MODE: Input up to seven commands into the MULTI-COMMAND button, and transmit the sequence of commands at the push of a single button.

LEARN

This system's remote control can "learn" the commands of other remote control units, regardless of manufacturer, as long as the other unit is of the infrared type.
On rare occasions, programming this unit may be impossible with some special types of infrared remote control units.
In some cases, the original remote control unit may be required for special situations. But as a rule, this Pioneer remote control can be used for most system control needs, including video as well as audio equipment.

Learning capacity and buttons that can learn

The buttons shown in the diagram can learn. By changing the CONTROL MODE, a single button can be used to learn a maximum of nine commands, enabling a total of 261 commands to be learned. However, the capacity for learning differs depending on the remote control signal. With Pioneer remote control signals, about 70 commands can be learned.



[Learning procedure]

1. **Press the LEARN button to switch to the LEARN mode.**
2. **Press one of the CONTROL MODE buttons.**
3. **Press one of the Learning function buttons.**
4. **Receive a remote control signal from another remote control and learn.**

[Operation example]

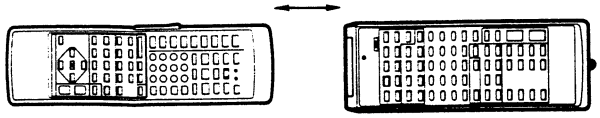
As a learning example, an explanation follows on how to use the CONTROL MODE VCR 1 [▷] button to learn the VCR PLAY signal.

Place the transmission sections of the programmable remote control unit and the remote control of the VCR facing each other.

NOTE:

Be sure to place the remotes on a stable surface such as a table while doing this. Also, avoid placing near fluorescent lighting fixtures or in direct sunlight. When programing operations, use new batteries.

2 to 5 cm (1 to 2 inches)

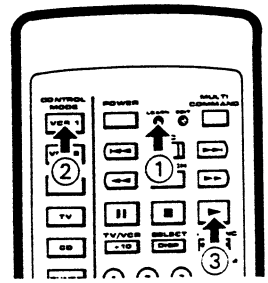


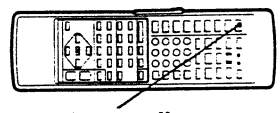
Place the two units on a table, separated by 2 to 5 cm (1 to 2 inches).
Memorization will not be possible if they are too close.

1. **Press the LEARN button.**
   - All the CONTROL MODE buttons flash at random.
2. **Press the VCR 1 CONTROL MODE button.**
   - Only the VCR 1 button flashes.
3. **Press the [▷] button.**
   - The VCR 1 button goes out, and lights after about one second. If you perform procedure 4 before the VCR 1 button lights, correct learning is not possible, so be sure to confirm that the button is lit.
4. **Continue pressing the PLAY button on the VCR remote control.**
   - When learning is completed, the VCR 1 button turns off, and all the CONTROL MODE buttons flash at random. The VCR 1 [▷] button has learned the new signal.

During the learning operation, if you press the VCR [▷] button twice, or move the remote control, correct learning is not possible.

To continue learning with other buttons, continue from procedure 2.





When it turns off, learning has been completed.

(VCR remote control)

Press the PLAY button.

To end the learning operation, press the LEARN button.

[When learning is not possible]

After the selected CONTROL MODE button (for example VCR 1) flashes twice, and all the CONTROL MODE buttons flash, repeat the learning operation from procedure 2.

[When learning is not possible because memory is full]

After the selected CONTROL MODE button (for example VCR 1) flashes four times, the LEARN MODE is canceled.

If the memory becomes full even when you have used only a small number of buttons for learning, take the following steps.

- **Try learning once more using the button that resulted in full memory.**

Memory may appear to be full even when it isn't due to the two remote controls being too far apart, not enough power remaining in the batteries, or the effect of light from fluorescent lighting fixtures or direct sunlight.

- **Check buttons already used for learning.**

If the CONTROL MODE button remains lit after you have quickly pressed and released a button used for learning, memorization in that button is incorrect, resulting in the memory full condition. If you perform learning once more, abnormal data is cleared, returning you to normal conditions.

NOTE:

- *After pressing the LEARN button, if you do not press a button within about 30 seconds, the LEARN MODE is canceled.*
- *After pressing one CONTROL MODE button, if you do not press a button that can learn within about 30 seconds, the LEARN MODE is canceled. If a button other than a one that can learn is pressed, the condition for CONTROL MODE button input is resumed.*
- *After pressing an operation button that can learn, if a remote control signal is not received within 45 seconds, the LEARN MODE is canceled.*

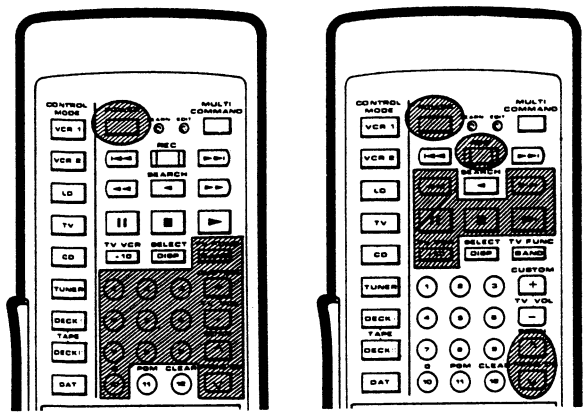
EDIT

In the EDIT MODE, there is the PRESET MODE and MULTI-EDIT MODE.

PRESET MODE (TV, VCR 1, VCR 2)

12 kinds of remote control signal formats are already preset for basic TV and VCR functions. If they conform to your TV or VCR functions, you can automatically preset operation buttons with the desired format's remote control signals and use to command operations. It is not necessary to learn commands one at a time.
Preset operation buttons are indicated in the diagram by ▨.
When you also want to use other buttons, use the LEARN operation to memorize commands.

(TV) (VCR)



Button functions are the same as Pioneer's unified remote control code functions, so refer to page 38 concerning TV functions, and page 37 concerning VCR functions.

NOTE:

- *If there is a remote control operation button for a function your TV or VCR does not have, operation is not possible.*
- *Depending on the kind of remote control signal, it may not be possible to preset TV FUNC button for TV operation.*
- *The Pioneer remote control code remains in the TV DISP, 11, and 12 buttons, and the VCR DISP, 1 to 12 buttons without presetting.*

[Procedure for presetting]

1. **Press the EDIT button to switch to the EDIT mode.**
2. **Press one of the CONTROL MODE buttons (VCR 1, VCR 2 , or TV).**
3. **Press one of the buttons 1 to 12.**
   - One kind of code is preset.
   - To continue presetting, repeat operation procedure 2, 3.
4. **Press the EDIT button.**
   - The EDIT mode is canceled.
5. **Confirm that the component (TV or VCR) can be operated by the preset code.**
   If operation is not possible, repeat the procedure from step 2, and press a different number button (1—12) at step 3 to search for a preset code that enables operation. Refer to the diagram on this page.

[Operation example]

As a preset example, here is an explanation of how to preset in VCR 1.

1. **Press the EDIT button.**
   - The VCR 1, VCR 2, and TV CONTROL MODE buttons flash in sequence.
2. **Press the VCR 1 CONTROL MODE button.**
   - Only the VCR 1 button flashes.
3. **Press one of the buttons 1 to 12.**
   - For example, if you press button 1, the remote control signal format selected with VCR1 operation button 1 is preset. The CONTROL MODE buttons light in sequence (indicating that registration has been completed), and then the VCR 1, VCR 2, and TV buttons flash in sequence. (Returning to the condition in procedure 1).
   - To continue presetting for VCR 2 and TV, repeat operation procedures 2 and 3.
4. **Press the EDIT button.**
   - The EDIT mode is canceled.
5. **Point the remote control at the sensor window of the VCR you want to operate and press an operation button to confirm that operation is possible.**
   - If operation is possible, presetting has been completed.
   - If operation is not possible, repeat operations from step 2, selecting a different number button (1 to 12) at step 3.

If there is a button among buttons 1 to 12 that cannot operate, press the EDIT button once more to cancel the EDIT mode, and memorize in the LEARN mode.

NOTE:

- *After pressing the EDIT button, if a button is not pressed within about one minute, the EDIT mode is canceled.*
- *After presetting, you can use the LEARN mode to memorize a command in a preset button, but the preset signal is erased.*
- *After memorizing in the LEARN mode, if you preset operations under specified buttons, signals memorized in the LEARN mode are cleared.*

Remote control codes of other manufacturers preset in the preset mode

The following table shows the PRESET MODE buttons (1 to 12) used to call up the remote control codes of other manufacturers. Preset remote control signals in the table, however, may not always enable operation. If operation is not possible, switch to the LEARN mode, and learn signals from the VCR or TV remote control. Numbers in parenthesis indicate a reduced possibility of operation.

Manufacturer	TV	VCR
RCA	1, (10)	(1), (6)
ZENITH	3	(3), (4)
GE	8, (11), (1)	(1), (8)
SONY	4	4
TOSHIBA	5	5, (9)
HITACHI	6 (10)	6
PHILIPS	7	—
JVC	—	7
PANASONIC	8	8
MITSUBISHI	9, (10)	9
SANYO	—	10, (12)
SHARP	(2)	2
GOLD STAR	(10)	(11)
MAGNAVOX	(7), (10), (12)	(8), (9)
SYLVANIA	(7), (10), (12)	(8), (9)
QUASER	8	8
FISHER	—	12, (10)
WARD'S	(2), (7), (10), (11)	(2)

MULTI-EDIT MODE

A maximum of seven commands can be programmed into MULTI COMMAND button. This enables a series of signals to be transmitted simply by pushing the MULTI COMMAND button.

(Example) Programming the following three commands into the MULTI COMMAND button.
① RECEIVER POWER
② RECEIVER FUNCTION CD
③ CD PLAY (►)

1. **Press the EDIT button. (Switches to the EDIT mode)**
   • The VCR 1, VCR 2, and TV CONTROL MODE buttons flash in sequence.
2. **Press the MULTI COMMAND button. (Switches to the MULTI-EDIT mode)**
   • The CONTROL MODE buttons flash at random.
3. **Press the RECEIVER POWER button.**
   • The CONTROL MODE buttons go out, and then flash at random. (Registration is completed)
4. **Press the CD receiver input selector button.**
   • The CONTROL MODE buttons go out, and then flash at random. (Registration is completed)
5. **Press the CD CONTROL MODE button.**
   • The CD button flashes.
6. **Press the PLAY (►) button.**
   • The CD button goes out, and then the CONTROL MODE buttons flash at random. (Registration is completed)
7. **Press the MULTI COMMAND button.**
   • The CONTROL MODE buttons light in sequence (This means that registration has been completed), and then the VCR 1, VCR 2, and TV buttons flash in sequence.
8. **Press the EDIT button.**
   • The EDIT mode is canceled.

If you press the MULTI COMMAND button, these remote control signals are transmitted in the order programmed, so if CONTROL IN/OUT is connected (refer to page 20), and if remote control signals can reach both the receiver and CD player sensor windows, power to the receiver switches on, the input selector switches to CD, and the CD player starts playing. (When the CD player's power cord is plugged into the receiver's switched AC OUTLET.)

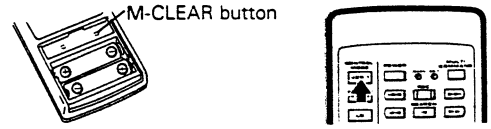
NOTE:

- *After pressing the seventh command, the MULTI-EDIT mode is registered automatically (The VCR 1, VCR 2, and TV CONTROL MODE buttons flash in sequence), but the EDIT mode is not canceled. To cancel the EDIT mode, press the EDIT button.*
- *After memorizing six or less commands, if you cancel the EDIT mode without pressing the MULTI COMMAND button again, all the registered commands are cleared, leaving the previous commands as they were.*
- *If a button is for transmission, even if it is not an operation button in the selected CONTROL MODE, registration is still possible. (Buttons such as the VCR 1 |◄◄).*
  In this case, during signal transmission, the CONTROL MODE button momentarily lights, but the remote control code is not transmitted.
- *If the component to be operated is installed at a distance, if there is an obstacle between a specific component sensor window and the remote control, or if component operation speeds are very different, MULTI-COMMAND operation may be incorrect. When repeating operations, first return to the initial settings for each component. For operations such as power ON/OFF, if components are switched ON, they can be switched OFF by transmitting a signal.*

RETURNING TO THE INITIAL SETTINGS

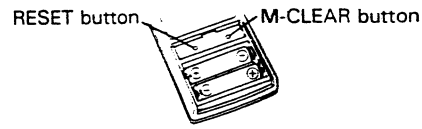
Initialization of particular CONTROL MODES

1. **Remove the battery compartment cover.**
2. **While pressing the M-CLEAR button inside the cover, press the button for the CONTROL MODE (for example VCR 1) you want to initialize.**
   • For example, if you initialize VCR 1 using the method mentioned above, the CONTROL MODE button lights for about one second, and the VCR 1 operation buttons are initialized.



Initializing the entire memory

1. **Remove the battery compartment cover.**
2. **While pressing the M-CLEAR button inside the cover, press the RESET button.**
   • Do not release the M-CLEAR button before releasing the RESET button. While pressing the M-CLEAR button, press the RESET button, and quickly release.
   Initialization is not possible if the buttons are pressed in the reverse order.
   • All the CONTROL MODE operation buttons are initialized, and data in the MULTI-COMMAND button is cleared.



TROUBLESHOOTING

Incorrect operation is often mistaken for equipment malfunction. If you think that there is something wrong with this component, check the points below. Sometimes the trouble may lie in another component. Investigate the other components and electrical appliances being used.
If the trouble cannot be rectified even after exercising the checks listed below, ask your nearest PIONEER authorized service center or your dealer to carry out repair work.

Symptom	Cause	Remedy
Power does not come on even when POWER switch is pressed.	• Power cord is disconnected. • Instances are rare, but the problem may be due to the operation of the protector circuit.	• Connect cord securely. • Unplug the power cord of the unit from the AC wall outlet, then plug it in again.
Control was not possible regardless of what operation button was pressed.	• Static electricity affected the unit when the air was dry, such as in winter.	• Unplug the power cord of the unit from the AC wall outlet, then plug it in again. • If static electricity is pronounced, it is recommended that you operate the unit using the remote control unit.
No sound is produced, even when the INPUT SELECTOR button is selected.	• Connections are incorrect.	• Consult page 8 — 14 and perform connections correctly.
	• The MUTING button is pressed.	• Press the MUTING button to cancel the MUTING effect.
	• VOLUME is turned down.	• Raise volume.
	• Speaker connecting wires are disconnected from speaker terminals.	• Connect wires to terminals securely.
	• One or both of the input cords are disconnected.	• Connect input cords securely.
	• TAPE 2 MONITOR button is in the ON position.	• Press the button again to the OFF position.
	• The SPEAKERS button is OFF.	• Switch the SPEAKERS button ON.
No picture is produced, even when the INPUT SELECTOR button is selected.	• Connections are incorrect.	• Consult page 8 — 14 and perform connections correctly.
	• The V- SIGNAL SELECTOR is not set properly.	• Set correctly.
	• The VCR and the selected INPUT SELECTOR button are not correct.	• Press the correct button.
High noise level.	• Station has not been tuned in to correct frequency.	• Tune the station in correctly.
	• Antenna has not been connected or has become disconnected.	• Connect the antenna securely.
	FM reception • Accessory T-type antenna remains bundled up or it is not pointing in right direction. • Weak broadcasting station signals.	• Stretch both ends of antenna taut and locate direction yielding optimum reception. • Replace accessory T-type antenna with outdoor FM antenna.
	AM reception • AM loop antenna is not pointing in right direction.	• Change the direction of AM loop antenna and find a position where reception is improved.
	• Weak broadcasting station signals.	• Erect outdoor AM antenna or connect ground wire.
	• Noise being picked up from this unit and other equipment (especially electrical appliances using motors or fluorescent lights).	• Stop using appliances generating noise or remove them from vicinity of the stereo equipment. • Separate the loop antenna from the unit by some distance.
No auto stop.	• Input signals are not strong enough.	• (FM) If the T-type antenna is being used, change to an outdoor antenna.
TV source can't be seen when the VCR's TV tuner is used.	• TV antenna is not connected to VCR, or connections are faulty.	• Consult the VCR's operating instructions, and connect antenna correctly.
	• You are attempting to watch a TV source using a VCR with copy system connections. In general, when copy system connections are made, the VCR's TV tuner function ceases to operate. For details, consult the operating instructions for your VCR.	• Disconnect the copy system connection (TV tuner function will operate).
Video tape copies can't be made with the VCR.	• Video tape copy connections haven't been made.	• Look again closely at the section VIDEO SYSTEM CONNECTIONS on page 10, and connect correctly.

Symptom	Cause	Remedy
No rear sound is produced.	• The SURROUND MODE switch is set incorrectly. • The REAR LEVEL is turned down. • Speaker connecting wires are disconnected from REAR SPEAKERS terminals.	• Set correctly. • Adjust the rear level with the remote control unit's REAR LEVEL buttons. • Connect wires to terminals securely.
Remote control does not work.	• Batteries are dead or no batteries in remote control unit. • Poor angle or too great a distance from the remote sensor window. • There is an obstacle between you and the remote sensor window. • A fluorescent light is shining on the remote sensor window. • CONTROL MODE is not set for the component you want to operate. • You are pressing a button that does not transmit a signal.	• Insert new batteries. • Use within seven meters and within a 30 degree angle of the remote sensor window. • Change your position or move the obstacle. • Move so fluorescent light does not shine directly on amplifier front panel remote sensor window. • Select the correct CONTROL MODE button and press. • Refer to remote control operation instructions.

Abnormal functioning of this unit may be caused by lightning, static electricity, or other external interference. To restore normal operation, turn the power off and then on again, or unplug the AC power cord and then plug it in again.

SPECIFICATIONS

Amplifier section

Continuous average power output of 100 watts* per channel, min., at 8 ohms, from 20 Hz to 20,000 Hz with no more than 0.05 % total harmonic distortion (front).**

Continuous power output (When using SURROUND MODE)
(Rear only driven) ..... 20 W + 20 W (1 kHz, 0.8 %, 8 Ω)
(Front and center driven)
Front ..... 70 W + 70 W (1 kHz, 0.8 %, 8 Ω)
Center ..... 70 W (1 kHz, 0.8 %, 8 Ω)
Dynamic Power (2 Ω/4 Ω) ..... 230 W/220 W
Input (Sensitivity/Impedance)
PHONO MM ..... 2.5 mV/47 kΩ
CD, TAPE 1/DAT, TAPE 2, LD,
VCR 1, VCR 2 ..... 150 mV/47 kΩ
Phono Overload Level (T.H.D. 0.1 %, 1 kHz)
PHONO MM ..... 150 mV
Frequency Response
PHONO MM ..... 20 Hz to 20,000 Hz ±0.3 dB
CD, TAPE 1/DAT, TAPE 2, LD,
VCR 1, VCR 2 ..... 5 Hz to 100,000 Hz $^{+0}_{-3}$ dB
Output (Level/Impedance)
TAPE 1/DAT REC, TAPE 2 REC ..... 150 mV/2.2 kΩ
VCR 1 OUT, VCR 2 OUT ..... 150 mV/2.2 kΩ
Tone Control
BASS ..... ±8 dB (100 Hz)
TREBLE ..... ±8 dB (10 kHz)
Muting ..... −∞ dB
Loudness Contour ..... 6 dB (100 Hz)
3 dB (10 kHz)
Signal-to-Noise Ratio (IHF, short circuited, A network)
PHONO MM ..... 76 dB
CD, TAPE 1/DAT, TAPE 2, LD, VCR 1, VCR 2 ..... 97 dB
Signal-to-Noise Ratio [EIA, at 1 W (1 kHz)]
PHONO MM ..... 77 dB
CD, TAPE 1/DAT, TAPE 2, LD, VCR 1, VCR 2 ..... 80 dB

* ***Measured pursuant to the Federal Trade Commission's Trade Regulation rule on Power Output Claims for Amplifier.***
** ***Measured by Audio Spectrum Analyzer.***

VIDEO Section

Input (Sensitivity/Impedance)
VCR 1, VCR 2, LD ..... 1 Vp-p/75 Ω
Output (Level/Impedance)
VCR 1, VCR 2, MONITOR ..... 1 Vp-p/75 Ω
Frequency Response
VCR 1, VCR 2, LD → MONITOR ..... 5 Hz — 7 MHz $^{+0}_{-3}$ dB
Signal to Noise Ratio ..... 55 dB
Cross Talk ..... 55 dB

MAINTENANCE OF EXTERNAL SURFACES

- Use a polishing cloth or dry cloth to wipe off dust and dirt.
- When the surfaces are very dirty, wipe with a soft cloth dipped in some neutral cleanser diluted five or six times with water, and wrung out well, and then wipe again with a dry cloth. Do not use furniture wax or cleaners.
- Never use thinners, benzene, insecticide sprays and other chemicals on or near this unit, since these will corrode the surfaces.

FM Tuner Section

Frequency Range ..... 87.5 MHz to 108 MHz
Usable Sensitivity ..... Mono; 10.8 dBf, IHF (0.95 µV/75 Ω)
50 dB Quieting Sensitivity ..... Mono; 15.3 dBf, (1.6 µV/75 Ω)
Stereo; 37.0 dBf, (19.5 µV/75 Ω)
Signal-to-Noise Ratio ..... Mono; 80 dB (at 65 dBf)
Stereo; 76 dB (at 85 dBf)
Distortion ..... Mono; 0.2 % (1 kHz)
Stereo; 0.3 % (1 kHz)
Capture Ratio ..... 1 dB
Alternate Channel Selectivity ..... 65 dB (400 kHz)
Stereo Separation ..... 45 dB (1 kHz)
Frequency Response ..... 30 Hz to 15 kHz ($^{+0.5}_{-2.0}$) dB
Antenna Input ..... 300 Ω balanced
75 Ω unbalanced

AM Tuner Section

Frequency range
With 9 kHz step ..... 531 kHz — 1,602 kHz
With 10 kHz step ..... 530 kHz — 1,700 kHz
Sensitivity (IHF, Loop antenna) ..... 300 µV/m
Selectivity ..... 25 dB
Signal-to-Noise Ratio ..... 50 dB
Antenna ..... Loop antenna

Miscellaneous

Power requirements
U.S. and Canadian models ..... AC 120 V, 60 Hz
Multi-voltage model ..... AC 110 V/120 — 127 V/220 V/240 V (Switchable), 50/60 Hz
Power consumption
U.S. and Canadian models ..... 240 W, 320 VA
Multi-voltage model ..... 610 W
AC Outlets
U.S. and Canadian models
SWITCHED x 2 ..... TOTAL 100 W (0.8 A) MAX
UNSWITCHED x 1 ..... 100 W (0.8 A) MAX
Multi-voltage model
SWITCHED x 2 ..... TOTAL 100 W MAX
UNSWITCHED x 1 ..... 100 W MAX
Dimensions ..... 420 (W) x 162 (H) x 406 (D) mm
16-9/16 (W) x 6-3/8 (H) x 16 (D) in
Weight (without package) ..... 9.7 kg (21 lb 6 oz)

Furnished Parts

FM T-type antenna 1
AM Loop antenna 1
Dry cell batteries
VSX-512S: size "AA" (IEC LR6/AM-3) Alkaline 2
VSX-502: size "AAA" (IEC R03/UM-4) 2
Remote control unit 1
Operating Instructions 1

NOTE:
Specifications and the design subject to possible modifications without notice due to improvements.

Dear Customer:

Selecting fine audio equipment such as the unit you've just purchased is only the start of your musical enjoyment. Now it's time to consider how you can maximize the fun and excitement your equipment offers. This manufacturer and the Electronic Industries Association's Consumer Electronics Group want you to get the most out of your equipment by playing it at a safe level. One that lets the sound come through loud and clear without annoying blaring or distortion—and, most importantly, without affecting your sensitive hearing.

Sound can be deceiving. Over time your hearing "comfort level" adapts to higher volumes of sound. So what sounds "normal" can actually be loud and harmful to your hearing. Guard against this by setting your equipment at a safe level BEFORE your hearing adapts.

To establish a safe level:

- Start your volume control at a low setting.
- Slowly increase the sound until you can hear it comfortably and clearly, and without distortion.

Once you have established a comfortable sound level:

- Set the dial and leave it there.

Taking a minute to do this now will help to prevent hearing damage or loss in the future. After all, we want you listening for a lifetime.

We Want You Listening For A Lifetime

Used wisely, your new sound equipment will provide a lifetime of fun and enjoyment. Since hearing damage from loud noise is often undetectable until it is too late, this manufacturer and the Electronic Industries Association's Consumer Electronics Group recommend you avoid prolonged exposure to excessive noise. This list of sound levels is included for your protection.

Decibel Level	Example
30	Quiet library, soft whispers
40	Living room, refrigerator, bedroom away from traffic
50	Light traffic, normal conversation, quiet office
60	Air conditioner at 20 feet, sewing machine
70	Vacuum cleaner, hair dryer, noisy restaurant
80	Average city traffic, garbage disposals, alarm clock at two feet.

THE FOLLOWING NOISES CAN BE DANGEROUS UNDER CONSTANT EXPOSURE

90	Subway, motorcycle, truck traffic, lawn mower
100	Garbage truck, chain saw, pneumatic drill
120	Rock band concert in front of speakers, thunderclap
140	Gunshot blast, jet plane
180	Rocket launching pad

Information courtesy of the Deafness Research Foundation.

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<93B06FF5C01>

Printed in Japan <ARB1419-A>